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Revised as of October 1, 1981

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Cite this Code **CFR**

thus: **46 CFR 90.01–1**

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The Code of Federal Regulations is a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government. The Code is divided into 50 titles which represent broad areas subject to Federal regulation. Each title is divided into chapters which usually bear the name of the issuing agency. Each chapter is further subdivided into parts covering specific regulatory areas.

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Each volume of the Code is revised at least once each calendar year and issued on a quarterly basis approximately as follows:

Title 1 through Title 16 ..... as of January 1
Title 17 through Title 27 ..... as of April 1
Title 28 through Title 41 ..... as of July 1
Title 42 through Title 50 ..... as of October 1

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The contents of the Federal Register are required to be judicially noticed (44 U.S.C. 1507). The Code of Federal Regulations is prima facie evidence of the text of the original documents (44 U.S.C. 1510).

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JOHN E. BYRNE,
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October 1, 1981.

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Title 46—SHIPPING is composed of eleven volumes. The parts in these volumes are arranged in the following order: Parts 1-29, 30-40, 41-69, 70-89, 90-109, 110-139, 140-155, 156-165, 166-199, 200-399 amd 400-end. The first nine volumes containing Parts 1-199 comprise Chapter I—Coast Guard, Department of Transportation. The tenth volume containing Parts 200 to 399 includes Chapter II—Maritime Administration, Department of Transportation. The eleventh volume containing Part 400 to end includes Chapter III—Coast Guard (Great Lakes Pilotage), Department of Transportation and Chapter IV—Federal Maritime Commission. The contents of these volumes represent all current regulations codified under this title of the CFR as of October 1, 1981.

Subject indexes appear for Subchapter B—Merchant Marine Officers and Seamen and Subchapter C—Uninspected Vessels following the subchapters in Parts 1-29; for Subchapter D—Tank Vessels in the Findings Aids section of Parts 30-40; for Subchapter F—Marine Engineering following the subchapter in Parts 41-69; for Subchapter H—Passenger Vessels following the subchapter in Parts 70-89; for Subchapter I—Cargo and Miscellaneous Vessels following the subchapter in Parts 90-109; for Subchapter J—Electrical Engineering following the subchapter in Parts 110-139; for Subchapter P—Manning of Vessels following the subchapter in Parts 156-165; and for Subchapter T—Small Passenger Vessels (Under 100 Gross Tons) following the subchapter in Parts 166-199.

In addition, this volume contains the table of Material Approved for Incorporation by Reference for Subchapter J—Electrical Engineering. The volume containing the text of Subchapter J (46 CFR Parts 110-139) has had no amendments since its last revision in October, 1979.

For this volume Clarietha T. English was Chief Editor. The Code of Federal Regulations publication program is under the direction of Martha B. Girard, assisted by Robert E. Jordan.

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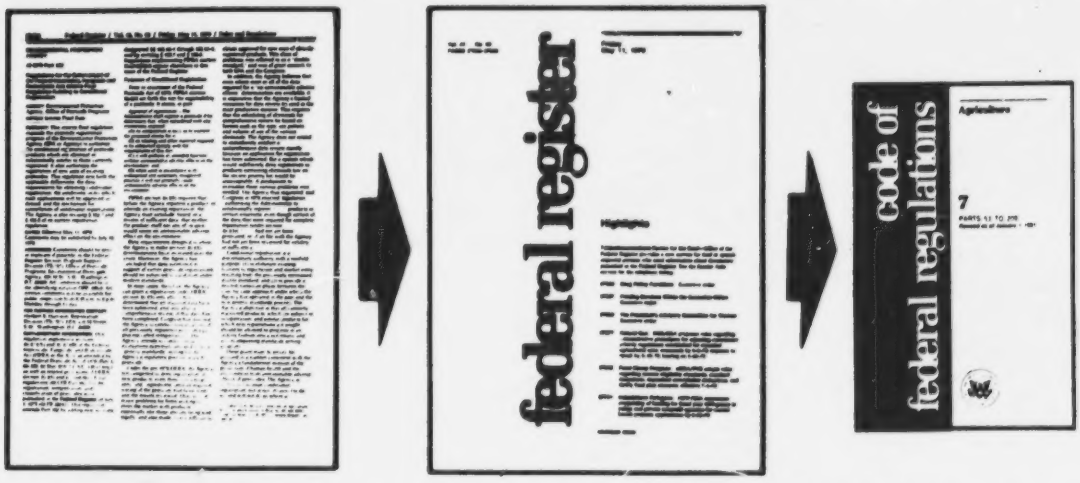

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Title 46—Shipping

(This Book contains Parts 90 to 109)

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CHAPTER I—COAST GUARD, DEPARTMENT OF TRANSPORTATION (Continued)

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SUBCHAPTER I—CARGO AND MISCELLANEOUS VESSELS

PART 90—GENERAL PROVISIONS

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90.05–5 Specific application noted in text.
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90.10–15 Industrial personnel.
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AUTHORITY: R.S. 4405, as amended, 4462, as amended, sec. 6(b)(1), 80 Stat. 938; 46 U.S.C. 375, 416, 49 U.S.C. 1655(b); 49 CFR 1.46(b) (35 FR 4959). Interpret or apply R.S. 4399, as amended, 4400, as amended, 4426, as amended, 4427, as amended, sec. 14, 29 Stat. 690, as amended, sec. 10, 35 Stat. 428, as amended, 41 Stat. 305, as amended, secs. 1, 2, 49 Stat. 1544, 1545, as amended, sec. 17, 54 Stat. 166, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 361, 362, 404, 405, 366, 395, 363, 367, 526p, 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 FR 9671, 3 CFR, 1965 Supp., unless otherwise noted.

SOURCE: CGFR 65-50, 30 FR 16970, Dec. 30, 1965, unless otherwise noted.

Subpart 90.01—Authority and Purpose

§ 90.01–1 Purpose of regulations.

(a) The purpose of the regulations in this subchapter is to set forth uniform minimum requirements for cargo and miscellaneous vessels, as listed in Column 5 of Table 90.05–1(a), in accordance with the intent of title 52 of the Revised Statutes and acts amendatory thereof or supplemental thereto,

as well as to implement various International Conventions for Safety of Life at Sea and other treaties which affect the merchant marine. The regulations are necessary to carry out the provisions of law affecting cargo and miscellaneous vessels and such regulations have the force of law.

§ 90.01-5 Assignment of functions.

(a) The Department of Transportation Act (Pub. L. 89-670, 80 Stat. 931-950, 49 U.S.C. 1651-1659), transferred to and vested in the Secretary of Transportation "* * * all functions, powers, and duties, relating to the Coast Guard of the Secretary of the Treasury and of other officers and offices of the Department of the Treasury" (subsection 6(b)(1), 49 U.S.C. 1655(b)). This transfer is subject to certain conditions, modifications, and exceptions as set forth in such act. By a rule in 49 CFR 1.4(a) the Secretary of Transportation delegated to the Commandant, U.S. Coast Guard authority to exercise certain functions, powers, and duties as set forth in subsections 6(a)(4), 6(b)(1), and 6(g) of such act (49 U.S.C. 1655), subject to conditions, exceptions and modifications as described in 49 CFR Part 1. By a rule in 49 CFR 1.9 the Secretary of Transportation continued in effect actions taken prior to April 1, 1967.

(b) The Commandant, U.S. Coast Guard, in a notice dated March 31, 1967, and effective April 1, 1967 (32 FR 5611), approved the continuation of orders, rules, regulations, policies, procedures, privileges, waivers, and other actions, which had been made, allowed, granted, or issued prior to April 1, 1967, and provided that they shall continue in effect according to their terms until modified, terminated, repealed, superseded, or set aside by appropriate authority.

[CGFR 68-32, 33 FR 5717, Apr. 12, 1968]

§ 90.01-10 Authority for regulations.

(a) *General.* (1) The authority to prescribe regulations generally is set forth in 46 U.S.C., sections 375 and 416, as well as in certain other provisions in 46 U.S.C., sections 170, 214, 215, 222, 224, 224a, 226, 228, 229, 230-234, 239, 240, 361, 362, 364, 372, 381, 391, 391a, 392, 393, 399, 400, 402-414, 435, 436, 451- 453, 460, 461, 462, 464, 467, 470-482, and 489-498, and acts amendatory thereof or supplemental thereto. Under the provisions of 46 U.S.C., section 372, the Commandant, U.S. Coast Guard, superintends the administration of vessel inspection laws and is required to produce a correct and uniform administration of the inspection laws, rules, and regulations.

(b) *Inspection and certification.* (1) The regulations regarding inspection and certification of cargo and miscellaneous vessels interpret or apply 46 U.S.C., sections 361, 362, 363, 366, 367, 391, 392, 395, 404, 405, 411, 435, and 481, and 50 U.S.C., section 198.

(c) *Construction and arrangement.* (1) The regulations regarding the construction and arrangement of cargo and miscellaneous vessels interpret or apply 46 U.S.C., sections 363, 367, 391, 392, 404, 481, and 482, and 50 U.S.C., section 198.

(d) *Stability.* (1) The regulations regarding stability of cargo and miscellaneous vessels interpret or apply 46 U.S.C., sections 85a, 88a, 363, 367, 391, 392, 404, 481, 482, and 483, and 50 U.S.C., section 198.

(e) *Lifesaving equipment.* (1) The regulations regarding lifesaving equipment of cargo and miscellaneous vessels interpret or apply 46 U.S.C., sections 363, 367, 391, 392, 404, 481, and 526p, and 50 U.S.C., section 198.

(f) *Fire protection equipment.* (1) The regulations regarding fire protection equipment of cargo and miscellaneous vessels interpret or apply 46 U.S.C., sections 363, 367, 391, 392, 395, 404, 481, and 526p, and 50 U.S.C., section 198.

(g) *Vessel control and miscellaneous systems and equipment.* (1) The regulations regarding vessel control and miscellaneous systems and equipment of cargo and miscellaneous vessels interpret or apply 46 U.S.C., sections 363, 367, 395, 391, 392, 404, and 435, and 50 U.S.C., section 198.

(h) *Operations.* (1) The regulations regarding operations of cargo and miscellaneous vessels interpret or apply 46 U.S.C., sections 363, 367, 391, 392, 395, 404, and 435, and 50 U.S.C., section 198.

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(i) *Special construction, arrangement, and provisions for certain dangerous cargoes in bulk.* (1) The regulations regarding special construction, arrangement, and provisions for certain dangerous cargoes in bulk of cargo and miscellaneous vessels interpret or apply 46 U.S.C., section 170, and 50 U.S.C., section 198.

Subpart 90.05—Application

§ 90.05–1 Vessels subject to requirements of this subchapter.

(a) This subchapter shall be applicable to all United States flag vessels indicated in Column 5 of Table 90.05–1(a) and to all such foreign vessels which carry 12 or less passengers from any port in the United States to the extent prescribed by law, except as follows:

(1) Any vessel of a foreign nation signatory to the International Convention for Safety of Life at Sea, 1960, and which has on board a current, valid safety equipment certificate.

(2) Any vessel operating exclusively on inland waters which are not navigable waters of the United States.

(3) Any vessel while laid up and dismantled and out of commission.

(4) With the exception of vessels of the U. S. Maritime Administration, any vessel with title vested in the United States and which is used for public purposes.

(b) Notwithstanding the exception previously noted in paragraph (a)(1) of this section, foreign vessels of novel design or construction or whose operation involves potential unusual risks shall be subject to inspection to the extent necessary to safeguard life and property in United States ports, as further provided by § 2.01–13 of Subchapter A (Procedures Applicable to the Public) of this chapter.

(c) Notwithstanding the exception noted in paragraph (a)(1), each foreign vessel shall report marine casualties occurring while the vessel is in the navigable waters of the United States as required by Subpart 97.07.

TABLE 90.05-1(a)

Method of propulsion	Size or other limitations [1]	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations [1]					
		Vessels inspected and certificated under Subchapter D—Tank Vessels [2]	Vessels inspected and certificated under either Subchapter H—Passenger Vessels [2345] or Subchapter T—Small Passenger Vessels [234]	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels [25]	Vessels subject to provisions of Subchapter C—Uninspected Vessels [23678]	Vessels subject to provisions of Subchapter U—Oceanographic Vessels [25679]	Vessels subject to the provisions of Subchapter O—Certain Bulk Dangerous Cargoes [10]
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
Steam	Vessels not over 65 feet in length.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers [7].	All tugboats and towboats.	All vessels except those covered by columns 3, 4, 5, and 7.	None	All vessels carrying in bulk the cargoes listed in table I of pt. 153 and table 4 of pt. 154.[12]
	Vessels over 65 feet in length.	All vessels carrying combustible or flammable liquid cargo in bulk [8].	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels of not over 15 gross tons which carry more than 6 passengers [7]. 3. All other vessels carrying passengers,[7] except:. a. Yachts b. Documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels except those covered by columns 3 and 4.	None	All vessels engaged in oceanographic research.	Do.

See footnotes at end of table.

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TABLE 90.05-1(a)—Continued

Method of propulsion	Size or other limitations [1]	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations [1]					
		Vessels inspected and certificated under Subchapter D—Tank Vessels [2]	Vessels inspected and certificated under either Subchapter H—Passenger Vessels [2 3 4 5] or Subchapter T—Small Passenger Vessels [2 3 4]	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels [2 5]	Vessels subject to provisions of Subchapter C—Uninspected Vessels [2 3 6 7 8]	Vessels subject to provisions of Subchapter U—Oceanographic Vessels [2 5 6 7 9]	Vessels subject to the provisions of Subchapter O—Certain Bulk Dangerous Cargoes [10]
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
			c. Towing and fishing vessels, in other than ocean and coastwise service, may carry persons on the legitimate business of the vessel, in addition to crew, but not to exceed one for each net ton of the vessel.				
Motor	Vessels not over 15 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers [7].	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146..	All vessels except those covered by columns 3, 4, 5, and 7.	None	Do.
	Vessels over 15 gross tons except seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or flammable liquid cargo in bulk [8].	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All vessels not over 65 feet in length which carry more than 6 passengers [7].	All vessels carrying freight for hire except those covered by columns 3 and 4.	All vessels except those covered by columns 3, 4, 5, and 7.	None	Do.

See footnotes at end of table.

			3. All other vessels of over 65 feet in length carrying passengers for hire except documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.				
	Seagoing motor vessels of 300 gross tons and over.	All vessels carrying combustible or flammable liquid cargo in bulk [8].	1. All vessels carrying more than 12 passengers on an international voyage, except yachts. 2. All other other vessels carrying passengers,[7] except:. a. Yachts..... b. Documented cargo or tank vessels issued a permit to carry not more than 16 persons in addition to the crew.	All vessels except those covered by columns 3 and 4, and those engaged in the fishing, oystering, clamming, crabbing, or any other branch of the fishery, kelp, or sponge industry.	All vessels except those covered by columns 3, 4, 5, and 7.	All vessels engaged in oceanographic research.	Do.
Sail.....	Vessels not over 700 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying more than 6 passengers [7].	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	None.....	None.....	Do.
	Vessels over 700 gross tons.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying passengers for hire.	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	None.....	None.....	Do.
Non-self propelled.....	Vessels less than 100 gross tons.	All vessels carrying combustible or liquid cargo in bulk.	All vessels carrying more than 6 passengers [7].	Those vessels carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	All barges carrying passengers except those covered by column 4.	None.....	All tank barges [11] carrying in bulk the cargoes listed in table 151.05 of this chapter.[11 12]

See footnotes at end of table.

TABLE 90.05-1(a)—Continued

Method of propulsion	Size or other limitations [1]	Classes of vessels (including motorboats) examined or inspected under various Coast Guard regulations [1]					
		Vessels inspected and certificated under Subchapter D—Tank Vessels [2]	Vessels inspected and certificated under either Subchapter H—Passenger Vessels [2 3 4 5] or Subchapter T—Small Passenger Vessels [2 3 4]	Vessels inspected and certificated under Subchapter I—Cargo and Miscellaneous Vessels [2 5]	Vessels subject to provisions of Subchapter C—Uninspected Vessels [2 3 6 7 8]	Vessels subject to provisions of Subchapter U—Oceanographic Vessels [2 5 6 7 9]	Vessels subject to the provisions of Subchapter O—Certain Bulk Dangerous Cargoes [10]
Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
	Vessels 100 gross tons or over.	All vessels carrying combustible or flammable liquid cargo in bulk.	All vessels carrying passengers for hire.	All seagoing barges except those covered by columns 3 and 4; and those inland barges carrying dangerous cargoes when required by 46 CFR Part 98 or 146.	All barges carrying passengers except those covered by columns 4 and 7.	All seagoing barges engaged in oceanographic research.	Do.

[1] Where length is used in this table it means the length measured from end to end over the deck, excluding sheer. This expression means a straight line measurement of the overall length from the foremost part of the vessel to the aftermost part of the vessel, measured parallel to the centerline.

[2] Subchapters E (Load Lines), F (Marine Engineering), J (Electrical Engineering), and N (Dangerous Cargoes) of this chapter may also be applicable under certain conditions. The provisions of 46 U.S.C. 170 and Subchapter N (Dangerous Cargoes) of this chapter apply whenever explosives or dangerous articles or substances are on board vessels (including motorboats), except when specifically exempted by law.

[3] Public nautical schoolships, other than vessels of the Navy and Coast Guard, shall meet the requirements of Part 167 of Subchapter R (Nautical Schools) of this chapter. Civilian nautical schoolships, as defined by 46 U.S.C. 1331, shall meet the requirements of Subchapter H (Passenger Vessels) and Part 168 of Subchapter R (Nautical Schools) of this chapter.

[4] Subchapter H (Passenger Vessels) of this chapter covers only those vessels of 100 gross tons or more. Subchapter T (Small Passenger Vessels) of this chapter covers only those vessels of less than 100 gross tons.

[5] Vessels covered by Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter, where the principal purpose or use of the vessel is not for the carriage of liquid cargo, may be granted a permit to carry a limited amount of flammable or combustible liquid cargo in bulk. The portion of the vessel used for the carriage of the flammable or combustible liquid cargo shall meet the requirements of Subchapter D (Tank Vessels) in addition to the requirements of Subchapter H (Passenger Vessels) or I (Cargo and Miscellaneous Vessels) of this chapter.

[6] Any vessel on an international voyage is subject to the requirements of the International Convention for Safety of Life at Sea, 1960.

[7] The meaning of the term "passenger" is as defined in the Act of May 10, 1956 (Sec. 1, 70 Stat. 151; 46 U.S.C. 390). On oceanographic vessels scientific personnel on board shall not be deemed to be passengers nor seamen, but for calculations of lifesaving equipment, etc., shall be counted as persons.

[8] Boilers and machinery are subject to examination on vessels over 40 feet in length.

[9] Under 46 U.S.C. 441 an "oceanographic research vessel" is a vessel "* * * being employed exclusively in instruction in oceanography or limnology, or both, or exclusively in oceanographic research, * * *." Under 46 U.S.C. 443, "an oceanographic research vessel shall not be deemed to be engaged in trade or commerce." If or when an oceanographic vessel engages in trade or commerce, such vessel cannot operate under its certificate of inspection as an oceanographic vessel, but shall be inspected and certificated for the service in which engaged, and the scientific personnel aboard then become persons employed in the business of the vessel.

[10] Bulk dangerous cargoes are cargoes specified in table 151.01-10(b), in table I of Part 153, and in table 4 of Part 154 of this chapter.

[11] For manned tank barges see § 151.01-10(c) of this chapter.

[12] Except those cases excluded under 46 U.S.C. 170 or 391a.

(R.S. 4472, as amended (46 U.S.C. 170); sec. 204, 86 Stat. 427,as amended (46 U.S.C. 391a); sec. 6(b)(1), 80 Stat. 937 (49 U.S.C. 1655(b)(1); 49 CFR 1.46 (b), (t), (n)(4))

[CGFR 65-50, 30 FR 16970, Dec. 30, 1965, as amended by CGFR 67-83, 33 FR 1109, Jan. 27, 1968; CGFR 70-10, 35 FR 3711, Feb. 25, 1970; CGD 73-96, 42 FR 49025, Sept. 26, 1977; CGD 77-042, 42 FR 63643, Dec. 19, 1977]

§ 90.05-5 Specific application noted in text.

(a) At the beginning of the various parts, subparts, and sections, a more specific application is generally given for the particular portion of the text involved. This application sets forth the types, sizes, or services or vessels to which the text pertains, and in many cases limits the application of the text to vessels contracted for before or after a specific date. As used in this subchapter, the term "vessels contracted for" includes not only the contracting for the construction of a vessel, but also the contracting for a material alteration to a vessel, the contracting for the conversion of a vessel to a cargo or miscellaneous vessel, and the changing of service or route of a vessel if such change increases or modifies the general requirements for the vessel or increases the hazards to which it might be subjected.

§ 90.05-7 Ocean or unlimited coastwise vessels on inland and Great Lakes Routes.

(a) Vessels inspected and certificated for ocean or unlimited coastwise routes shall be considered suitable for navigation insofar as the provisions of this subchapter are concerned on any inland routes, including the Great Lakes.

§ 90.05-10 Application to vessels on an international voyage.

(a) Except for yachts and fishing vessels and as provided in paragraphs (b), (c), and (d) of this section, the regulations in this subchapter that apply to a vessel on an "international voyage" apply to a vessel that—

(1) Is mechanically propelled and of at least 500 gross tons; and

(2) Is engaged on a voyage—

(i) From a country to which the International Convention for Safety of Life at Sea, 1960, June 17, 1960, 16 U.S.T. 185, TIAS 5780, 436 UNTS 27 (SOLAS 60) applies, to a port outside that country or the reverse;

(ii) From any territory, including the Commonwealth of Puerto Rico, the Canal Zone, all possessions of the United States and all lands held by the United States under a protectorate or mandate, whose international relations are the responsibility of a contracting SOLAS 60 government, or which is administered by the United Nations, to a port outside that territory or the reverse; or

(iii) Between the contiguous states of the United States and the states of Hawaii or Alaska or between the states of Hawaii and Alaska.

(b) The regulations that apply to a vessel on an "international voyage" in this subchapter do not apply to ships engaged on a voyage solely on the Great Lakes and the St. Lawrence River as far east as a straight line drawn from Cap de Rosiers to West Point, Anticosti Island, the 63d Meridian;

(c) The Commandant or his authorized representative may exempt any vessel on an international voyage from the requirements of this subchapter if the vessel—

(1) Makes a single international voyage in exceptional circumstances; and

(2) Meets safety requirements prescribed for the voyage by the Commandant.

(d) The Commandant or his authorized representative may exempt any vessel from the construction or lifesaving requirements of this subchapter if—

(1) The vessel does not proceed more than 20 miles from the nearest land in the course of its voyage; and

(2) The Commandant determines that the conditions of the voyage render the application of the full lifesaving requirements unreasonable or unnecessary.

[CGD 72-131R, 38 FR 29320, Oct. 24, 1973]

§ 90.05-20 Applicability to offshore supply vessels.

Offshore supply vessels of 100 gross tons and less than 500 gross tons are subject to inspection under the provisions of this subchapter.

(Pub L. 96-378, 94 Stat. 1513 (46 U.S.C. 404-1); 49 CFR 1.46(b))

[45 FR 69244, Oct. 20, 1980]

§ 90.05-25 Seagoing barge.

(a) All nonself-propelled vessels of 100 gross tons and over that proceed on voyages on the high seas or ocean are subject to inspection and certification as seagoing barges.

(b) In applying the laws and regulations to manned seagoing barges, one criterion for invocation of safety standards is the description of seagoing barges by relative size in gross tons. When it is determined by the Commandant that the gross register tonnage for a particular manned seagoing barge, which is attained by exemptions, reductions, or other devices in the basic gross tonnage formulation, will circumvent or be incompatible with the application of specific safety requirements in the regulations in this subchapter for a manned seagoing barge of such physical size, the Commandant shall prescribe the regulations to be made applicable to such seagoing barge. When the Commandant determines that the gross register tonnage is not a valid criterion for the invocation of safety requirements based on relative size, the parties involved will be informed of the determination and of the regulations applicable to such manner seagoing barges, and before being permitted to operate such seagoing barges, compliance therewith shall be required. Endorsements or notations on the seagoing barge's certificate of inspection may be made as appropriate.

§ 90.05-30 Portable tanks—interpretive rulings.

(a) The phrase "drums, barrels, or other packages," as used in R.S. 4417a, as amended (46 U.S.C. 391a), and in R.S. 4472, as amended (46 U.S.C. 170), is interpreted to mean portable tanks having a maximum capacity of 110 U.S. gallons and Department of Transportation specification cylinders having a water capacity of not more than 1,000 pounds, which are actually loaded and discharged from vessels with their contents intact.

(b) The phrase "inflammable or combustible liquid cargo in bulk" as used in R.S. 4417a, as amended (46 U.S.C. 391a), and in R.S. 4472, as amended (46 U.S.C. 170), is interpreted to include such cargo in portable tanks of a capacity of more than 110 U.S. gallons.

(c) The phrase "liquid cargo" as used in R.S. 4417a, as amended (46 U.S.C. 391a), is interpreted to mean inflammable or combustible liquids.

(Interpret or apply R.S. 4417a, as amended, 4472, as amended; 46 U.S.C. 391a, 170)

[CGFR 65-50, 30 FR 16970, Dec. 30, 1965, as amended by CGFR 69-72, 34 FR 17484, Oct. 29, 1969]

§ 90.05-35 Flammable and combustible liquid cargo in bulk.

(a) Vessels inspected and certificated under this subchapter may carry limited quantities of flammable and combustible liquid cargo in bulk in the grades indicated, provided the Certificate of Inspection is endorsed to permit such carriage:

(1) Cargo vessels.

(i) Grades D and E in an integral tank, in a portable tank approved under Subpart 98.35 of this chapter, or in a marine portable tank approved under Part 64 of this chapter.

(ii) Dangerous articles in a portable tank in accordance with Part 146 of this chapter, or in a marine portable tank approved for the article under Part 64 of this chapter.

(2) Miscellaneous vessels, such as cable, salvage, pile driving and oil drilling rig vessels.

(i) Grades B and lower in a fixed independent or an integral tank authorized by the Commandant.

(ii) Grades D and E in a portable tank approved under Subpart 98.35 of this chapter, or in a marine portable tank approved under Part 64 of this chapter.

(iii) Dangerous articles in a portable tank in accordance with Part 146 of this chapter, or in a marine portable

tank approved for the article under Part 64 of this chapter.

(R.S. 4417a, as amended, 4472, as amended; 46 U.S.C. 391a, 170)

[CGFR 69-127, 35 FR 9981, June 17, 1970, as amended by CGD 73-172, 39 FR 22953, June 25, 1974]

§ 90.05–40 Application to vessels concerning nuclear energy.

(a) Pertinent definitions are in § 90.10–24.

(b) Special provisions for "nuclear vessels" are in Part 99 of this subchapter.

(c) The regulations covering the transportation and handling of radioactive materials as cargo are in Part 146 of Subchapter N (Dangerous Cargoes) of this chapter.

(d) The regulations covering pressure containing portions of nuclear power systems are in Part 55 of Subchapter F (Marine Engineering) of this chapter. See § 56.04–20 of Subchapter F (Marine Engineering) of this chapter for nuclear piping. See Subpart 61.25 of Subchapter F (Marine Engineering) of this chapter for requirements regarding periodic tests and inspections of nuclear reactor power plants.

[CGFR 68-82, 33 FR 18900, Dec. 18, 1968. Redesignated at 35 FR 9981, June 17, 1970]

Subpart 90.10—Definition of Terms Used in This Subchapter

§ 90.10–1 Approved.

This term means approved by the Commandant unless otherwise stated.

§ 90.10–2 Barge.

This term means any nonself-propelled vessel.

§ 90.10–3 Carrying passengers for hire.

The carriage of any person or persons by a vessel for a valuable consideration, whether directly or indirectly flowing to the owner, charterer, operator, agent or any other person interested in the vessel.

§ 90.10–5 Carrying freight for hire.

The carriage of any goods, wares, or merchandise or any other freight for a valuable consideration whether directly or indirectly flowing to the owner, charterer, operator, agent, or any other person interested in the vessel.

§ 90.10–7 Commandant.

This term means the Commandant of the Coast Guard.

§ 90.10–9 Coast Guard District Commander.

This term means an officer of the Coast Guard designated as such by the Commandant to command all Coast Guard activities within his district, which include the inspection, enforcement, and administration of title 52, Revised Statutes, and acts amendatory thereof or supplemental thereto, and rules and regulations thereunder.

§ 90.10–11 Coastwise.

Under this designation shall be included all vessels normally navigating the waters of any ocean or the Gulf of Mexico 20 nautical miles or less offshore.

§ 90.10–12 Gas free.

This term means free from dangerous concentrations of flammable or toxic gases.

(Interpret or apply R.S. 4417a, as amended, 4472, as amended; 46 U.S.C. 391a, 170)

§ 90.10–13 Great Lakes.

Under this designation shall be included all vessels navigating the Great Lakes.

§ 90.10–14 Headquarters.

This term means the Office of the Commandant, U.S. Coast Guard, Department of Transportation, Washington, D.C. 20591.

[CGFR 67-90, 33 FR 1015, Jan. 26, 1968]

§ 90.10–15 Industrial personnel.

This term means every person carried on board an industrial vessel for the sole purpose of carrying out the industrial business or functions of the industrial vessel. Examples of industrial personnel include tradesmen, such as mechanics, plumbers, electricians, and welders; laborers, such as wreckers and construction workers; and other persons, such as supervisors, engi-

neers, technicians, drilling personnel, and divers.

[CGFR 67-90, 33 FR 1015, Jan. 26, 1968]

§ 90.10–16 Industrial vessel.

This term means every vessel which by reason of its special outfit, purpose, design, or function engages in certain industrial ventures. Included in this classification are such vessels as drill rigs, missile range ships, dredges, cable layers, derrick barges, pipe lay barges, construction and wrecking barges. Excluded from this classification are vessels carrying freight for hire or engaged in oceanography, limnology, or the fishing industry.

[CGFR 67-90, 33 FR 1015, Jan. 26, 1968]

§ 90.10–19 Lakes, bays, and sounds.

Under this designation shall be included all vessels navigating the waters of any of the lakes, bays, or sounds other than the waters of the Great Lakes.

§ 90.10–21 Marine inspector or inspector.

These terms mean any person from the civilian or military branch of the Coast Guard assigned under the superintendence and direction of an Officer in Charge, Marine Inspection, or any other person as may be designated for the performance of duties with respect to the inspection, enforcement, and administration of title 52, Revised Statutes, and acts amendatory thereof or supplemental thereto, and rules and regulations thereunder.

§ 90.10–23 Motorboat.

This term means any vessel indicated in Column 5 of Table 90.05–1(a) 65 feet in length or less which is propelled by machinery (including steam). The length shall be measured from end to end over the deck excluding sheer. This term includes a boat temporarily or permanently equipped with a detachable motor and any such boat when so propelled is subject to the applicable provisions of the Act of April 25, 1940, as amended (secs. 1–22, 54 Stat. 163–167, as amended, 46 U.S.C. 526–526u), and the regulations promulgated thereunder. For the purpose of this subchapter, motorboats are included under the term "vessel" unless specifically noted otherwise. The various classes of motorboats are as follows:

Class A—Any motorboat less than 16 feet in length.
Class 1—Any motorboat 16 feet or over and less than 26 feet in length.
Class 2—Any motorboat 26 feet or over and less than 40 feet in length.
Class 3—Any motorboat 40 feet or over and not more than 65 feet in length.

§ 90.10–24 Nuclear energy, radioactive material, and nuclear vessel.

(a) The term "nuclear energy" means all forms of energy released by nuclear fission or radioactive decay, or by any other form of nuclear transformation.

(b) The term "radioactive material" means any material or combination of materials that spontaneously emits ionizing radiation.

(c) The term "nuclear vessel" means any vessel in which power for propulsion, or for any other purpose, is derived from nuclear energy; or any vessel handling or processing substantial amounts of radioactive material other than as cargo.

[CGFR 68-82, 33 FR 18900, Dec. 18, 1968]

§ 90.10–25 Ocean.

Under this designation shall be included all vessels navigating the waters of any ocean or the Gulf of Mexico more than 20 nautical miles offshore.

§ 90.10–27 Officer in charge, marine inspection.

This term means any person from the civilian or military branch of the Coast Guard designated as such by the Commandant and who, under the superintendence and direction of the Coast Guard District Commander, is in charge of an inspection zone for the performance of duties with respect to the inspections, enforcement, and administration of title 52, Revised Statutes, and acts amendatory thereof or supplemental thereto, and rules and regulations thereunder.

§ 90.10–29 Passenger.

A passenger is every person other than the master and the members of

the crew or other persons employed or engaged in any capacity on board a vessel in the business of that vessel. In the case of a vessel on an international voyage a child under 1 year of age is not counted as a passenger.

§ 90.10–31 Rules of the Road.

(a) The term "Rules of the Road" means the statutory and regulatory rules governing navigation of vessels. These rules are also published by the Coast Guard in pamphlet form as follows:

(1) Rules of the Road—International—Inland (CG–169).

(2) Rules of the Road—Great Lakes (CG–172).

(3) Rules of the Road—Western Rivers (CG–184).

(b) The current editions of the "Rules of the Road" pamphlets may be obtained from any Marine Inspection Office.

§ 90.10–33 Rivers.

Under this designation shall be included all vessels whose navigation is restricted to rivers and/or canals exclusively, and to such other waters as may be so designated by the Coast Guard District Commander.

§ 90.10–35 Recognized classification society.

The term "recognized classification society" means the American Bureau of Shipping or other classification society recognized by the Commandant.

§ 90.10–36 Seagoing barge.

The phrase "every seagoing barge of one hundred gross tons or over" in subsections 395(a) and 395(b), Title 46, U.S.C. (sec. 10, 35 Stat. 428, as amended), includes every nonself-propelled vessel of 100 gross tons or over, if such vessel will navigate the high seas or ocean. The phrase "nonself-propelled vessel" means a vessel without sufficient means for self-propulsion and is required to be towed.

§ 90.10–37 Vessel.

Where the word "vessel" is used in this subchapter, it shall be considered to include all vessels indicated in Column 5 of Table 90.05–1(a), except as otherwise noted in this subpart.

§ 90.10–38 Specially suitable for vehicles.

A space which is "specially suitable for vehicles" is one designed for the carriage of automobiles or other self-propelled vehicles with batteries connected and fuel tanks containing gasoline on vessels on ocean or unlimited coastwise voyages. Requirements for the design and protection of spaces "specially suitable for vehicles" appear in Subparts 92.15, 95.05, 95.15, 96.05, 97.36, 97.37, and 97.80 of this subchapter. In addition, preparation of automobiles prior to carriage, with the exception of disconnecting battery cables, must be in accordance with the applicable provisions of § 146.27–30 of Subchapter N (Dangerous Cargoes) of this chapter.

[CGFR 66–33, 31 FR 15284, Dec. 5, 1966]

§ 90.10–39 Western rivers.

For the purpose of this subchapter, the term "western rivers" is as defined in CG–184, "Rules of the Road—Western Rivers."

§ 90.10–40 Offshore supply vessels.

(a) An offshore supply vessel is a vessel that is propelled by machinery other than steam, that is of 15 gross tons and less than 500 gross tons, and that regularly carries goods, supplies, or equipment in support of exploration, exploitation, or production of offshore mineral or energy resources.

(b) An existing offshore supply vessel is one that was operating as such on or before January 1, 1979, or that, if not in service of any kind on or before that date, was contracted for on or before that date and entered service as such before October 6, 1980.

(c) A new offshore supply vessel is one that is not an existing offshore supply vessel.

(Pub. L. 96–378, 94 Stat. 1513 (46 U.S.C. 404–1); 49 CFR 1.46(b))

[45 FR 69244, Oct. 20, 1980]

Subpart 90.15—Equivalents

§ 90.15–1 Conditions under which equivalents may be used.

(a) Where in this subchapter it is provided that a particular fitting, material, appliance, apparatus, or equip-

ment, or type thereof, shall be fitted or carried in a vessel, or that any particular provision shall be made or arrangement shall be adopted, the Commandant may accept in substitution therefor any other fitting, material, apparatus, or equipment, or type thereof, or any other arrangement: *Provided,* That he shall have been satisfied by suitable trials that the fitting, material, appliance, apparatus, or equipment, or type thereof, or the provision or arrangement is at least as effective as that specified in this subchapter.

(b) In any case where it is shown to the satisfaction of the Commandant that the use of any particular equipment, apparatus, or arrangement not specifically required by law is unreasonable or impracticable, the Commandant may permit the use of alternate equipment, apparatus, or arrangement to such an extent and upon such conditions as will insure, to his satisfaction, a degree of safety consistent with the minimum standards set forth in this subchapter.

Subpart 90.20—General Marine Engineering Requirements

§ 90.20–1 Marine engineering details.

(a) All marine engineering details such as piping, valves, fittings, boilers, pressure vessels, etc., and their appurtenances installed on the vessel, shall be designed, constructed, and installed in accordance with the provisions of Subchapter F (Marine Engineering) of this chapter.

(R.S. 4418, as amended, 4433, as amended; 46 U.S.C. 392, 411)

Subpart 90.25—General Electrical Engineering Requirements

§ 90.25–1 Electrical engineering details.

(a) All electrical engineering details and installations shall be designed and installed in accordance with Subchapter J (Electrical Engineering) of this chapter.

(R.S. 4418, as amended; 46 U.S.C. 392)

Subpart 90.30—Special Provisions

§ 90.30–1 Vessels acquired or documented under the act of August 9, 1954.

(a) Vessels acquired or documented under the Act of August 9, 1954 (sec. 3, 68 Stat. 675; 50 U.S.C. 198), shall be subject to the applicable provisions of Title 52 of the Revised Statutes, acts amendatory thereof or supplemental thereto and the rules and regulations thereunder.

(b) Unapproved lifesaving, firefighting, and other equipment may be continued in service as long as, in the opinion of the Officer in Charge, Marine Inspection, such equipment is in good and serviceable condition. All replacements shall be in accordance with Coast Guard requirements.

§ 90.30–5 Installations of equipment made during the unlimited national emergency declared by the President on May 27, 1941.

(a) Boilers, pressure vessels, machinery, piping, electrical, and other installations, including lifesaving, firefighting, and other safety equipment, installed on vessels during the Unlimited National Emergency declared by the President on May 27, 1941, and prior to the termination of Title V of the Second War Powers Act, as extended (sec. 501, 56 Stat. 180, 50 U.S.C. App. 635), which do not fully meet the detailed requirements of the regulations in this chapter, may be continued in service if found to be satisfactory by the Commandant for the purpose intended.

§ 90.30–10 Existing offshore supply vessels.

(a) Existing offshore supply vessels of 100 gross tons and less than 500 gross tons that do not possess a valid certificate of inspection must be registered with an officer in charge, marine inspection on or before January 6, 1981. The Initial inspection for certification for each registered offshore supply vessel shall be made within two years of the date the vessel is registered.

(b) The registration must be on board the vessel and available for inspection.

(Pub. L. 96-378, 94 Stat. 1513 (46 U.S.C. 404-1); 49 CFR 1.46(b))

[45 FR 69244, Oct. 20, 1980]

Subpart 90.35—American Bureau of Shipping's Standards

AUTHORITY: Interpret or apply sec. 25, 41 Stat. 998, as amended; 46 U.S.C. 881.

§ 90.35–1 Standards to be used.

(a) Where in this subchapter an item, or method of construction, or testing is required to meet the standards established by the American Bureau of Shipping, the current standards in effect at the time of construction of the vessel, or otherwise as applicable, shall be used. The current standards of other recognized classification societies may also be accepted upon approval by the Commandant.

§ 90.35–5 Where obtainable.

(a) The standards established by the American Bureau of Shipping are usually published annually and may be purchased from the American Bureau of Shipping, 45 Broad Street, New York, N.Y., 10004. These standards may be also examined at the Office of the Commandant (M), U.S. Coast Guard, Washington, D.C. 20591, or at the Office of any Coast Guard District Commander or Officer in Charge, Marine Inspection.

[CGFR 65-50, 30 FR 1697, Dec. 30, 1965, as amended by CGFR 68-32, 33 FR 5718, Apr. 12, 1968]

PART 91—INSPECTION AND CERTIFICATION

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91.35-1 When made.

Subpart 91.37—Inspection of Cargo Gear

91.37-1 When made.
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91.37-5 Tests and examinations of shipboard cargo gear.
91.37-10 Cargo gear of special design and limited use.

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91.37-15 Cargo gear plans required when plans are not approved by a classification society or recognized cargo gear organization.
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Subpart 91.40—Drydocking

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91.45-1 Notice required.
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91.50-1 Inspection and testing required when making alterations, repairs, or other such operations involving riveting, welding, burning or like fire-producing actions.

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91.60-40 Duration of certificates.
91.60-45 American Bureau of Shipping.

AUTHORITY: R.S. 4405, as amended, 4462, as amended, sec. 6(b)(1), 80 Stat. 938; 46 U.S.C. 375, 416, 49 U.S.C. 1655(b); 49 CFR 1.46(b) (35 FR 4959). Interpret or apply R.S. 4399, as amended, 4400, as amended, 4417, as amended, 4418, as amended, 4426, as amended, 4427, as amended, 4433, as amended, 4453, as amended, 4488, as amended, sec. 14, 29 Stat. 690, as amended, sec. 10, 35 Stat. 428, as amended, 41 Stat. 305, as amended, secs. 1, 2, 49 Stat. 1544, 1545, as amended, sec. 17, 54 Stat. 166, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 361, 362, 391, 392, 404, 405, 411, 435, 481, 366, 395, 363, 367, 526p, 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 FR 9671, 3 CFR, 1965 Supp, unless otherwise noted.

SOURCE: CGFR 65-50, 30 FR 16974, Dec. 30, 1965, unless otherwise noted.

Subpart 91.01—Certificate of Inspection

AUTHORITY: Interpret or apply R.S. 4421, as amended, 4423, as amended, sec. 12, 35 Stat. 428, as amended; 46 U.S.C. 399, 400, 397, unless otherwise noted.

§ 91.01-1 When required.

(a) Except as noted in this subpart or Subpart 91.05, no vessel subject to inspection and certification shall be operated without a valid certificate of inspection.

§ 91.01-5 Posting.

(a) On vessels of over 25 gross tons, the original certificate of inspection shall, in general, be framed under glass and posted in a conspicuous place where it will be most likely to be observed. On vessels not over 25 gross tons, and on other vessels such as barges, where the framing of the certificate under glass would be impracticable, the original certificate of inspection shall be kept on board to be shown on demand.

§ 91.01-10 Period of validity.

(a) Certificates of inspection will be issued for periods of either 1 or 2 years. For nuclear vessels it shall be for a period of 1 year; see also § 99.10-1 of this subchapter. Application may be made by the master, owner, or agent for inspection and issuance of a new certificate of inspection at any time during the period of validity of the current certificate. For nuclear vessels see Part 99 of this subchapter.

(b) Certificates of inspection may be revoked or suspended by the Coast Guard where such process is authorized by law. This may occur if the vessel does not meet the requirements of law or regulations in this chapter or if there is a failure to maintain the safety requirements requisite to the issuance of a certificate of inspection.

(c) (1) In the case of the following vessels, modification of the period of validity of the certificate of inspection will be permitted as set forth in this paragraph:

(i) Nonself-propelled vessels of 100 gross tons and over proceeding on the high seas or ocean for the sole purpose of changing place of employment.

(ii) Nonself-propelled vessels of 100 gross tons and over making rare or infrequent voyages on the high seas or ocean and returning to the port of departure.

(2) The certificate of inspection may be issued for a specific period of time to cover a described situation or for one voyage only but in no case to exceed 2 years. The certificate of inspection will include the conditions under which the vessel must operate. Unless the vessel is in compliance with this Subchapter insofar as it applies to seagoing barges of 100 gross tons and over, such vessel shall not carry any person on board while underway, and the certificate of inspection will be endorsed as an unmanned seagoing barge.

(R.S. 4472, as amended, sec. 2, 23 Stat. 118, as amended, secs. 2, 622, 63 Stat. 496, 545; 46 U.S.C. 170, 2, 14 U.S.C. 2, 633)

[CGFR 65-50, 30 FR 16974, Dec. 30, 1965, as amended by CGFR 68-82, 33 FR 18901, Dec. 18, 1968]

§ 91.01-15 Temporary certificate.

(a) If necessary to prevent delay of the vessel, a temporary certificate of inspection, Form CG-854, shall be issued pending the issuance and delivery of the regular certificate of inspection. Such temporary certificate shall be carried in the same manner as the regular certificate and shall in all ways be considered the same as the regular certificate of inspection which it represents.

§ 91.01-20 Expired certificate.

(a) Nothing in this subpart shall prevent a vessel upon a regularly established line from a port in the United States to a port of a foreign country not contiguous to the United States whose certificate of inspection expires at sea or while said vessel is in a foreign port or a port of Hawaii from lawfully completing her voyage without the valid certificate of inspection or temporary certificate required by this subpart: *Provided,* That the certificate of inspection did not expire within 15 days after the vessel left the last port of the United States, and that the voyage shall be completed within 30 days after the expiration of the certificate of inspection.

§ 91.01-25 Emergency carriage of more than 16 persons in addition to the crew on vessels not engaged in international voyages.

(a) When a District Commander finds that an emergency situation exists, he authorizes the local Officer in Charge, Marine Inspection, to issue amendments to vessels' certificates of inspection authorizing the carriage of more than 16 persons in addition to the crew.

(b) Upon receipt of an application from a vessel's owner or operator, the Local Officer in Charge, Marine Inspection, amends the vessel's certificate of inspection after—

(1) additional lifesaving and firefighting equipment found necessary by the OCMI has been provided;

(2) a stability evaluation has been performed; and

(3) any other conditions considered necessary by the OCMI have been satisfied.

(46 USC 882, 49 CFR 1.46)

[CGD 76-004, 41 FR 32744, Aug. 5, 1976]

Subpart 91.05—Permit To Proceed to Another Port for Repair

§ 91.05-1 When issued.

(a) The Officer in Charge, Marine Inspection, may issue a permit to proceed to another port for repair, Form CG-948 to a vessel, if in his judgment it can be done with safety, even if the certificate of inspection of the vessel has expired or is about to expire.

§ 91.05-5 To whom issued.

(a) Such permit will only be issued upon the written application of the master, owner, or agent of the vessel.

§ 91.05-10 Conditions of permit.

(a) The permit will state upon its face the conditions under which it is issued and whether or not the vessel is permitted to carry freight or passengers.

§ 91.05-15 Posting.

(a) The permit shall be carried in a manner similar to that described in § 91.01-5 for a certificate of inspection.

Subpart 91.15—Inspection of Vessels

§ 91.15-1 Standard in inspection of hulls, boilers, and machinery.

(a) In the inspection of hulls, boilers, and machinery of vessels, the standards established by the American Bureau of Shipping, see Subpart 90.35 of this subchapter, respecting material and construction of hulls, boilers, and machinery, and the certificate of classification referring thereto, except where otherwise provided for by the rules and regulations in this subchapter, Subchapter E (Load Lines), Subchapter F (Marine Engineering), or Subchapter J (Electrical Engineering) of this chapter shall be accepted as standard by the inspectors.

Subpart 91.20—Initial Inspection

§ 91.20-1 Prerequisite of certificate of inspection.

(a) The initial inspection is a prerequisite of the issuance of the original certificate of inspection.

§ 91.20-5 When made.

(a) The original inspection will only be made upon the written application of the owner or builder of the vessel to the Officer in Charge, Marine Inspection, on Form CG-3752, Application for Inspection of U.S. Vessel, at or nearest the port where the vessel is located.

§ 91.20-10 Plans.

(a) Before application for inspection is made, and before construction is started, the owner or builder shall have plans approved by the Commandant indicating the proposed arrangement and construction of the vessel. The procedure for submitting plans and the list of plans to be supplied is set forth in Subpart 91.55.

§ 91.20-15 Scope of inspection.

(a) The initial inspection, which may consist of a series of inspections during the construction of a vessel, shall include a complete inspection of the structure, including the outside of the vessel's bottom, the machinery, unfired pressure vessels, equipment and the inside and outside of the boilers. The inspection shall be such as to insure that the arrangements, material, and scantlings of the structure, boilers, and other pressure vessels and their appurtenances, piping, main and auxiliary machinery, electrical installations, lifesaving appliances, fire-detecting and extinguishing equipment, pilot ladders, pollution prevention equipment, and other equipment fully comply with the applicable regulations for such vessel and are in accordance with approved plans, and determine that the vessel is in possession of a valid certificate issued by the Federal Communications Commission, if any. The inspection shall also be such as to insure that the workmanship of all parts of the vessel and its equipment is in all respects satisfactory and that

the vessel is provided with lights, and means of making sound signals and distress signals as required by applicable regulations and the applicable Rules of the Road.

(b) When equipment is installed which is not required by applicable regulations in this subchapter, that equipment shall be inspected and tested as required for such equipment by applicable regulations in Subchapter H (Passenger Vessels) of this chapter. For example, fire-detecting systems shall be inspected and tested as required by Subpart 71.20 of Subchapter H (Passenger Vessels) of this chapter.

(c) For nuclear vessels, the inspections required by this section shall be made except insofar as they may be limited by the presence of radiation. In addition the inspection shall include any special preoperational tests and inspections prescribed by the Atomic Energy Commission in its operating license, by the nuclear plant operating procedures, or by the vessel's Safety Assessment. See Part 99 of this subchapter.

(R.S. 4472, as amended, sec. 2, 23 Stat. 118, as amended, sec. 2, 63 Stat. 496, as amended, sec. 633, 63 Stat. 545, sec. 311(j)(1)(C), 86 Stat. 816, 868; 83 Stat. 852; 46 U.S.C. 170, 2, 14, U.S.C. 2, 633, 33 U.S.C. 1161(j)(1)(C), 42 U.S.C. 4321, et seq.; E.O. 11548; 3 CFR 1966-1970 Comp., p. 949; 49 CFR 1.46 (m))

[CGFR 65-50, 30 FR 16974, Dec. 30, 1965, as amended by CGFR 68-32, 33 FR 5718, Apr. 12, 1968; CGFR 68-82, 33 FR 18901, Dec. 18, 1968; CGD 71-161R, 37 FR 28262, Dec. 21, 1972]

§ 91.20-20 Specific tests and inspections.

(a) The applicable tests and inspections as set forth in Subpart 91.25 of this part shall be made at this time. In addition, the following specific tests and inspections shall be made by the inspector.

(1) Installation of lifeboats, davits, and winches—see Subpart 94.35 of this subchapter.

(2) Installation of carbon dioxide extinguishing piping—see § 95.15-15 of this subchapter.

(3) For inspection procedures of marine engineering equipment and systems, see Subchapter F (Marine Engineering) of this chapter.

(4) For inspection procedures of Electrical Engineering equipment and systems, see Subchapter J (Electrical Engineering) of this chapter.

(5) For inspection and tests of tanks containing certain dangerous cargoes in bulk, see Part 98 of this subchapter.

Subpart 91.25—Inspection for Certification

§ 91.25-1 Prerequisite of reissuance of certificate of inspection.

(a) An inspection for certification is a prerequisite of the reissuance of a certificate of inspection.

§ 91.25-5 When made.

(a) The inspection for certification will be made only upon written application of the master, owner, or agent of the vessel on Form CG-3752, Application for Inspection of U.S. Vessel, to the Officer in Charge, Marine Inspection, at or nearest the port where the vessel is located.

§ 91.25-10 Scope of inspection.

(a) The inspection for certification shall include an inspection of the structure, boilers, and other pressure vessels, machinery, and equipment. The inspection shall be such as to insure that the vessel, as regards the structure, boilers and other pressure vessels, and their appurtenances, piping, main and auxiliary machinery, electrical installations, lifesaving appliances, fire-detecting and extinguishing equipment, pilot ladders, pollution prevention equipment, and other equipment, is in satisfactory condition and fit for the service for which it is intended, and that it complies with the applicable regulations for such vessel and determine that the vessel is in possession of a valid certificate issued by the Federal Communications Commission, if required. The lights and means of making sound signals and the distress signals carried by the vessel shall also be subject to the above mentioned inspection for certification for the purpose of insuring that they comply with the requirements of the applicable regulations and the applicable Rules of the Road.

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(b) For nuclear vessels, the inspections required by this section shall be made except insofar as they may be limited by the presence of radiation. See also Subpart 99.10 of this subchapter.

(Sec. 311(j)(1)(C) 86 Stat. 816, 868, 83 Stat. 852; 1161(j)(1)(C), 42 U.S.C. 4321, et seq.; E.O. 11548; 3 CFR 1966-1970 Comp., p. 949; 49 CFR 1.46(m))

[CGFR 65-50, 30 FR 16974, Dec. 30, 1965, as amended by CGFR 68-32, 33 FR 5718, Apr. 12, 1968; CGFR 68-82, 33 FR 18901, Dec. 18, 1968; CGD 71-161R, 37 FR 28262, Dec. 21, 1972]

§ 91.25-15 Lifesaving equipment.

(a) At each inspection for certification, except as modified in paragraph (a)(2) of this section, the marine inspector shall conduct the following tests and inspections of lifesaving equipment:

(1) It shall be demonstrated that the air tanks of all lifesaving appliances are airtight.

(2) Each lifeboat shall be lowered to near the water and then be loaded with its allowed capacity, evenly distributed throughout the length, and then be lowered into the water until it is afloat, and be released from the falls. In making this test persons or deadweight may be used. The total weight used shall be at least equal to the allowed capacity of the lifeboat considering persons to weight 165 pounds each. This test shall be made at least once in each two-year period. If practicable it shall be made at the inspection for certification or at a reinspection.

(3) Each life preserver shall be examined to determine its serviceability. If found to be satisfactory, it will be stamped "Passed," together with the date, the port, and the inspector's initials. If not in a serviceable condition, the life preserver shall be removed from the vessel's equipment, and if beyond repair, shall be destroyed in the presence of the inspector.

(4) All lifeboat winch electrical control apparatus shall be opened up and inspected.

(5) Where gravity davits are installed, it shall be demonstrated that the lifeboat can be swung out and lowered from any stopped position by merely releasing the brake on the lifeboat winch. The use of force to start the davits or the lifeboat winch will not be permitted.

(6) Inflatable liferafts shall be serviced at an approved servicing facility in accordance with the provisions of Subpart 160.051 of Subchapter Q (Specifications) of this chapter. Inflatable liferafts shall be serviced at an approved servicing facility every 12 months or not later than the next vessel inspection for certification provided the total time since date of last servicing does not exceed 15 months. The period for servicing is computed from the date of last servicing. Except in emergencies no servicing should be done aboard vessels. If at any time external damage is found to the container or straps or if the seal is broken, the Officer in Charge, Marine Inspection, shall be notified and the raft shall be serviced by an approved servicing facility.

NOTE: After the raft has been satisfactorily serviced in the presence of a marine inspector at an approved servicing facility, the raft is repacked and sealed and the carrying case stamped "PASSED" together with the date, port, and the marine inspector's initials.

(7) All other items of lifesaving equipment shall be examined to determine that they are in suitable condition.

(8) A hydraulic release used in the installation of any liferaft, inflatable liferaft, lifefloat, or buoyant apparatus shall undergo the periodic servicing and testing required by Subpart 160.062 of Subchapter Q (Specifications) of this chapter every 12 months which may be extended to 15 months as determined by the date shown on its inspection tag. The springs of a spring-tensioned gripe used in such an installation shall be renewed when the accompanying hydraulic release is serviced and tested.

(b) At each inspection for certification, and more often if necessary, a marine inspector inspects each exposure suit to determine its serviceability. Each exposure suit found not to be in a serviceable condition must be removed from the vessel.

[CGFR 65-50, 30 FR 16974, Dec. 30, 1965, as amended by CGFR 68-32, 33 FR 5718, Apr. 18, 1968; CGD 76-003a, 45 FR 24477, Apr. 10, 1980; 45 FR 29588, May 5, 1980]

§ 91.25-20 Fire-extinguishing equipment.

(a) At each inspection for certification and at such other times as considered necessary the inspector shall determine that all fire-extinguishing equipment is in suitable condition and may require such tests as are considered necessary to determine the condition of the equipment. The inspector shall determine if the tests and inspections required by § 97.15-60 of this subchapter have been conducted. At each inspection for certification the inspector shall conduct the following tests and inspections of fire-extinguishing equipment:

(1) All hand portable fire extinguishers and semi-portable fire extinguishing systems shall be checked as noted in Table 91.25-20(a)(1). In addition, the hand portable fire extinguishers and semi-portable fire extinguishing systems shall be examined for excessive corrosion and general condition.

TABLE 91.25-20(a)(1)

Type unit	Test
Soda acid	Discharge. Clean hose and inside of extinguisher thoroughly. Recharge.
Foam	Discharge. Clean hose and inside of extinguisher thoroughly. Recharge.
Pump tank (water or antifreeze).	Discharge. Clean hose and inside of extinguisher thoroughly. Recharge with clean water or antifreeze.
Cartridge operated (water, antifreeze or loaded stream).	Examine pressure cartridge and replace if end is punctured or if cartridge is otherwise determined to have leaked or to be in unsuitable condition. Remove liquid. Clean hose and inside of extinguisher thoroughly. Recharge with clean water, solution, or antifreeze. Insert charged cartridge.
Carbon Dioxide	Weigh cylinders. Recharge if weight loss exceeds 10 percent of weight of charge. Inspect hose and nozzle to be sure they are clear. [1]
Dry chemical (cartridge-operated type).	Examine pressure cartridge and replace if end is punctured or if cartridge is otherwise determined to have leaked or to be in unsuitable condition. Inspect hose and nozzle to see they are clear. Insert charged cartridge. Be sure dry chemical is free-flowing (not caked) and chamber contains full charge.
Dry chemical (stored pressure type).	See that pressure gage is in operating range. If not, or if seal is broken, weigh or otherwise determine that full charge of dry chemical is in extinguisher. Recharge if pressure is low or if dry chemical is needed.
Vaporizing liquid [2] (pump type).	Pump a few strokes into clean pail and replace liquid. Keep water out of extinguisher or liquid. Keep extinguisher completely full of liquid.
Vaporizing liquid [2] (stored pressure type).	See that pressure gage is in operating range. Weigh or check liquid level to determine that full charge of liquid is in extinguisher. Recharge if pressure is low or if liquid is needed.

[1] Cylinders must be tested and marked and all flexible connections and discharge hoses of semiportable carbon dioxide systems must be tested or renewed as required by §147.04-1 of Subchapter N (Dangerous Cargoes) of this chapter.

[2] Vaporizing-liquid type fire extinguishers containing carbon tetrachloride or chlorobromomethane or other toxic vaporizing liquids shall be removed from all vessels. (See § 95.50-5(e) of this subchapter.)

(2) Fixed fire-extinguishing systems shall be checked as noted in Table 91.25-20(a)(2). In addition, all parts of the fixed fire-extinguishing systems, shall be examined for excessive corrosion and general conditions.

TABLE 91.25-20(a)(2)

Type system	Test
Foam	Systems utilizing a soda solution shall have such solution replaced. In all cases, ascertain that powder is not caked.
Carbon dioxide	Weigh cylinders. Recharge if weight loss exceeds 10 percent of weight of charge. [1]

[1] Cylinders must be tested and marked and all flexible connections on fixed carbon dioxide systems must be tested or renewed as required by §147.04-1 of Subchapter N (Dangerous Cargoes) of this chapter.

(3) On all fire-extinguishing systems, all piping controls, valves, and alarms shall be checked to ascertain that the system is in operating condition. In this respect steam smothering lines

shall be checked with at least a 50 p.s.i. air pressure with the ends capped or by blowing steam through the lines at the designed pressure.

(4) The fire main system shall be operated and the pressure checked at the most remote and highest outlets. All firehose shall be subjected to a test pressure equivalent to the maximum pressure to which they may be subjected in service, but not less than 100 p.s.i.

[CGFR 65-50, 30 FR 16974, Dec. 30, 1965, as amended by CGFR 68-32, 33 FR 5718, Apr. 18, 1968; CGD 78-154, 44 FR 13491, Mar. 12, 1979]

§ 91.25-25 Hull equipment.

(a) At each inspection for certification, the inspectors shall conduct the following tests and inspections of hull equipment:

(1) All watertight doors shall be operated locally by manual power and also by hydraulic or electric power if so fitted. Where remote control is fitted, the doors shall also be operated by the remote control apparatus.

(2) The remote controls of all valves shall be operated.

(3) An inspection of the cargo gear shall be required. The inspection may consist of tests and examinations to determine the condition and suitability of the cargo gear. Current valid certificates and registers of cargo gear, issued by recognized nonprofit organizations or associations approved by the Commandant, may be accepted as prima facie evidence of the condition and suitability of the cargo gear. Cargo gear certificates and registers will not be issued by the Coast Guard.

(b) Every acceptable cargo gear certificate and/or register shall be properly executed by a person authorized to do so and shall:

(1) Certify as to the tests and examinations conducted;

(2) Show the dates on which the tests and examinations were conducted; and

(3) Indicate that the cargo gear therein described complies with standards equal to or exceeding those set forth in Subpart 91.37.

(c) Competent persons for the purposes of this section and Subpart 91.37 are:

(1) Coast Guard marine inspectors;

(2) Surveyors of the organizations or associations approved by the Commandant;

(3) Such other persons as are authorized by the regulations in Subpart 91.37 as may be required; and,

(4) Responsible officials or employees of the testing laboratories, companies, or organizations who conduct tests of pieces of loose cargo gear, wire rope, or the annealing of gear as may be required.

(d) The registers issued in connection with cargo gear certification must have all required entries fully completed as of the dates indicated, shall be kept current, and shall include the following:

(1) A register of the cargo handling machinery and the gear accessory thereto carried on the vessel named therein;

(2) Certification of the testing and examination of winches, derricks, and their accessory gear;

(3) Certification of the testing and examination of cranes, hoists, and their accessory gear;

(4) Certification of the testing and examination of chains, rings, hooks, shackles, swivels, and blocks;

(5) Certification of the testing and examination of wire rope;

(6) Certification of the heat-treatment of chains, rings, hooks, shackles, and swivels which require such treatment; and,

(7) Certification of the annual thorough examinations of gear not required to be periodically heat-treated.

(e) It is the responsibility of the master to have a ship's officer inspect cargo gear when required by Subpart 91.37. For those inspected vessels which do not have valid cargo gear certificates and registers as provided by this section, such vessels will be required to have their shipboard cargo gear undergo tests and examinations in accordance with the provisions of Subpart 91.37.

§ 91.25-30 Electrical engineering equipment.

For inspection procedures of electrical engineering equipment and sys-

tems see Subchapter J (Electrical Engineering) of this chapter.

§ 91.25-35 Marine engineering equipment.

(a) For inspection procedures of marine engineering equipment and systems, see Subchapter F (Marine Engineering) of this chapter.

§ 91.25-37 Tanks containing dangerous cargoes.

(a) For inspection and tests of tanks containing certain dangerous cargoes in bulk, see Part 98 of this subchapter.

(R.S. 4472, as amended; 46 U.S.C. 170)

§ 91.25-38 Pollution prevention.

At each inspection for certification, the inspector shall examine the vessel to determine that it meets the vessel design and equipment requirements for pollution prevention in 33 CFR Part 155, Subpart B.

(Sec. 311(j)(1)(C) and (D), 86 Stat. 816, 868), 83 Stat. 852; 33 U.S.C. 1161(j)(1)(C), 42 U.S.C. 4321, et seq.; E.O. 11548; 3 CFR 1966-1970 Comp., p. 949; 49 CFR 1.46(m))

[CGD 71-161R, 37 FR 28262, Dec. 21, 1972]

§ 91.25-40 Sanitary inspection.

(a) At each inspection for certification, the quarters, toilets, and washing spaces, galleys, serving pantries, lockers, etc., shall be examined by the inspector to be assured that they are in a sanitary condition.

(Sec. 4, 49 Stat. 1935, as amended; 46 U.S.C. 660a)

§ 91.25-45 Fire hazards.

(a) At each inspection for certification, the inspector shall examine the tank tops and bilges in the machinery spaces to see that there is no accumulation of oil which might create a fire hazard.

§ 91.25-50 Inspector not limited.

(a) Nothing in this subpart shall be construed as limiting the inspector from making such tests or inspections as he deems necessary to be assured of the safety and seaworthiness of the vessel.

Subpart 91.27—Reinspection

§ 91.27-1 When made.

(a) At least one reinspection shall be made on each vessel holding a certificate of inspection valid for two years. This reinspection will be made, where possible, between the tenth and fourteenth month of the period for which the certificate is valid.

(b) No written application for reinspection will be required.

§ 91.27-5 Scope.

(a) The inspector shall examine all accessible parts of the vessel's hull, machinery, and equipment to be assured that it is in a satisfactory condition.

(b) In general, the scope of the reinspection shall be the same as for the inspection for certification, but will be in less detail unless it is determined that a major change has occurred since the last inspection.

§ 91.27-10 Deficiencies in maintenance.

(a) If the reinspection reveals deficiencies in the maintenance as called for by the regulations in this subchapter, such necessary repairs or improvements shall be made as may be ordered.

§ 91.27-15 Inspectors not limited.

(a) Nothing in this subpart shall be construed as limiting the inspector from making such tests or inspections as he deems necessary to be assured of the seaworthiness of the vessel.

Subpart 91.30—Inspection After Accident

§ 91.30-1 General or partial survey.

(a) A survey, either general or partial, according to the circumstances, shall be made every time an accident occurs or a defect is discovered which affects the safety of the vessel or the efficacy or completeness of its lifesaving appliances, fire-fighting or other equipment, or whenever any important repairs or renewals are made. The survey shall be such as to insure that the necessary repairs or renewals have been effectively made, that the mate-

rial and the workmanship of such repairs or renewals are in all respects satisfactory, and that the vessel complies in all respects with the regulations in this subchapter.

(R.S. 4450, as amended; 46 U.S.C. 239)

Subpart 91.35—Sanitary Inspections

§ 91.35-1 When made.

(a) An inspection of quarters, toilet and washing spaces, serving pantries, galleys, etc., shall be made at least once in every month. If the route of the vessel is such that it is away from a United States port for more than one month, an inspection shall be conducted at least once every trip.

(Sec. 4, 49 Stat. 1935, as amended; 46 U.S.C. 660a)

Subpart 91.37—Inspection of Cargo Gear

§ 91.37-1 When made.

(a) The specific tests and examinations shall be made at the intervals stated in the regulations in this subpart.

(b) A thorough examination of the assembled gear shall be made at least once in every year.

(c) An inspection to determine the condition and suitability of shipboard cargo gear will be made by a marine inspector at each inspection for certification. Inspections may be made at such other times as considered necessary by the Officer in Charge, Marine Inspection.

(d) For vessels fitted with cargo gear, an initial test of the assembled units under proof loads shall be conducted, followed by a complete dismantling or disassembling of such gear and a thorough examination of the parts to ascertain its condition. Subsequent tests of the assembled units under proof loads, followed by a dismantling or disassembling of such gear and a thorough examination shall be made once every 4 years, or oftener if necessary.

§ 91.37-3 Definitions of terms and words used in this subpart.

(a) *Cargo gear.* The term "cargo gear" includes masts, stays, booms, winches, cranes, elevators, conveyors, standing and running gear forming that part of the shipboard cargo gear used in connection with the loading or unloading of a vessel. This term does not include material handling gear and rigging of special design vessels used solely in dredging, pile driving, drilling for mineral deposits, and construction work.

(b) *Dismantling or disassembling of gear.* The "dismantling" or "disassembling" of gear contemplated is the taking apart of units of gear to the extent necessary to determine the suitability of such gear for continued service and as may be specifically required to carry out the intent of a particular regulation on this subpart. After proof load tests the disassembling need not include the sheaves and pins of the blocks included in the test unless there appears to be evidence of deformation or failure.

(c) *Thorough examination.* The "thorough examination" contemplated is a visual examination, supplemented if necessary by other means such as by a hammer test or by a test with electronic or ultrasonic devices.

(d) *Ton.* The word "ton" means a ton of 2,240 pounds.

(e) *Safe working load.* The "safe working load" (SWL) contemplated is the load the gear is approved to lift, excluding the weight of the gear itself.

§ 91.37-5 Tests and examinations of shipboard cargo gear.

(a) For vessels fitted with cargo gear and without valid cargo gear certificates and registers issued by organizations or associations recognized by the Coast Guard, inspections shall be made by competent persons described in § 91.25-25(c) (1) and (2) to determine the condition and suitability of the shipboard cargo gear. For the initial and subsequent quardrennial inspections, all the cranes, winches, hoists, derrick booms, derrick and mast bands, and all parts used in loading or unloading cargo shall be assembled in units and such assembled units

shall then be tested under proof loads. The proof loads shall be handled for various types of units as required by specific regulations in this subpart. After the proof load tests of the assembled units of gear have been made, such gear shall be disassembled or dismantled so as to permit them to be thoroughly examined. The sheaves and pins of the blocks included in these proof load tests need not be removed unless there appears to be evidence of deformation or failure.

(b) For vessels fitted with cargo gear and holding valid cargo gear certificates and registers issued by organizations or associations recognized by the Coast Guard, the marine inspectors may accept such certificates as prima facie evidence of compliance with the requirements in this subpart. If an Officer in Charge, Marine Inspection, is in doubt as to the condition and suitability of shipboard cargo gear for such a vessel, the tests and examinations, or such portions thereof as deemed necessary, provided for in this subpart will be required.

(c) If any part or portion of the gear fails or becomes defective during such tests, such defective equipment shall be satisfactorily repaired or replaced.

§ 91.37-10 Cargo gear of special design and limited use.

(a) The regulations in this subpart shall apply to cargo gear of special design and limited use (derrick barges rigged for heavy lifts, cargo booms on self unloaders, etc.) only to the extent that it is practicable to do so. These requirements may be modified by the Officer in Charge, Marine Inspection, where the inspection is performed according to the design characteristics of such cargo gear.

(b) Nondestructive tests, such as radiography, ultrasonic, electronic or other methods, may be utilized to determine the condition of heavy lift gear after it has been unit tested, provided such methods are acceptable to the Officer in Charge, Marine Inspection, having cognizance of the tests. However, no deviations or modifications shall be permitted to lessen the requirements for cargo gear inspection as set forth in § 91.37-70 and the maintenance of the applicable cargo gear records as set forth in § 91.37-75.

§ 91.37-15 Cargo gear plans required when plans are not approved by a classification society or recognized cargo gear organization.

(a) For a new vessel or a vessel applying for initial inspection, the following plans of cargo gear shall be submitted in triplicate to the Officer in Charge, Marine Inspection, having jurisdiction for approval:

(1) Plans showing a stress diagram with the principal details of the gear.

(2) Plans containing a diagram showing the arrangement of the assembled gear and indicating the safe working load for each component part.

(b) The safe working load on which the design of any component part of the cargo gear is to be based, shall be taken as the maximum resultant load upon the component part in the design conditions assumed. The safe working load of the assembly is the load the gear is approved to lift, excluding the weight of the gear itself.

(c) One approved copy of each set of cargo gear plans shall be retained on the vessel.

§ 91.37-20 Cargo gear plans approved by a classification society.

(a) The plans required by § 91.37-15(a) need not be submitted to the Officer in Charge, Marine Inspection, for approval if such plans are or have been approved by the American Bureau of Shipping or similar classification society recognized by the Commandant.

(b) One approved copy of each set of cargo gear plans shall be retained on the vessel.

§ 91.37-23 Cargo gear plans approved by a recognized cargo gear organization.

(a) The plans required by § 91.37-15(a) need not be submitted to the Officer in Charge, Marine Inspection, for approval if such plans are or have been approved by a recognized cargo gear organization listed in paragraph (b) of this section.

(b) The following cargo gear organizations are recognized as having the technical competence to handle the re-

quired review of cargo gear plans, including stress and arrangement diagrams, and this recognition will continue in effect until suspended, canceled, or modified by proper authority:

(1) International Cargo Gear Bureau, Inc., with home office at 17 Battery Place, New York, N.Y. 10004.

(c) One approved copy of each set of cargo gear plans shall be retained on the vessel.

[CGFR 68-105, 33 FR 14703, Oct. 2, 1968, as amended by CGFR 69-116, 35 FR 6861, Apr. 30, 1970]

§ 91.37-25 Factors of safety.

(a) Except as provided in paragraph (b) of this section, in the design of cargo gear, the minimal safety factors in Table 91.37-25(a) must be used to meet the requirements of § 91.37-15.

(b) The Commandant may permit the use of safety factors different than those in Table 31.37-25(a) in the design of cargo gear that he considers special.

TABLE 91.37-25(a)

Safe working loads for component parts	Safety factors based on[1]—		
	Ultimate strength	Yield point	Breaking test load
All metal structural parts except steel booms, stayed masts, pins, and connections:			
5 tons or less working load of the assembled gear	5.00	[2] 2.75	.....
15 tons working load of the assembled gear	4.00	[2] 2.20	.....
60 tons or more working load of the assembled gear	3.75	[2] 2.05	.....
Steel booms:			
10 tons or less working load of the assembled gear	.....	3.00	.....
13 tons or more working load of the assembled gear	.....	2.50	.....
Stayed masts:			
10 tons or less working load of assembled gear	5.00	.....	.....
13 tons or more working load of assembled gear	4.00	.....	.....
Pins and connections:			
10 tons or less working load	.....	[2] 3.00	.....
13 tons or more working load of assembled gear	.....	[2] 2.50	.....
Wire rope:			
10 tons or less working load	.....	.....	5.00
13 tons or more working load	.....	.....	4.00
Fiber rope:			
For running rigging	7.00	.....	.....
For fixed gear and vangs	5.00	.....	.....
Wooden structural parts	8.00	.....	.....
Chains	4.50	.....	.....

[1] Intermediate values of safety factors may be used.
[2] The minimum yield point for design purposes shall not be considered greater than 72 percent of the minimum ultimate strength of the steel.

(Pub. L. 92-340, 86 Stat. 424, 427 (July 10, 1972))

[CGD 72-150R, 37 FR 20826, Oct. 4, 1972]

§ 91.37-30 Loose gear certificates and tests.

(a) (1) Evidence of compliance with the proof load test requirements in this section for all chains, rings, hooks, links, shackles, swivels, blocks, and any other loose gear whether accessory to a machine or not, but which is used as ship's cargo gear shall be listed on an appropriate certificate.

(2) This evidence of test and the recording thereof is required only once with respect to each article of gear so long as each article is identified and the certificates required are available on the vessel.

(3) Proof loads applied to the articles of loose gear shall be as shown in Table 91.37-30(a)(3).

(b) All chains, rings, hooks, links, shackles, swivels, blocks and any other loose gear whether accessory to a machine or not, but which is used or intended for use as ship's cargo gear, shall bear a mark or number by which each piece can be identified and shall be listed on a loose gear certificate. The safe working load "SWL" shall be marked on all blocks.

(c) The certificate shall show the distinguishing number or mark applied to the articles of gear; a description of the articles of gear; the date when the test proof load was applied; and the safe working load. The forms for loose gear certificates shall be as prescribed by and acceptable to associations or organizations approved by the Commandant and shall be suitable for the purposes of this section.

(d) After being tested all of the gear shall be examined to ascertain wheth-

er any part has been damaged, permanently deformed by the test or has other visible defects. The pins and sheaves of all tested blocks shall be removed for this purpose. If damaged during these tests, such gear shall be satisfactorily repaired or replaced.

(e) The required examinations as set forth in paragraph (d) of this section may be accomplished by mechanical, electrical or other means provided the method employed is equal in efficiency to the visual examination of disassembled gear.

TABLE 91.37-30(a)(3)

Articles of gear	*Proof load*
Chains, rings, hooks, links, shackles, swivels.	Twice the safe working load.
Single sheave block	Four times the safe working load.[1]
Multiple sheave block with safe working load up to and including 20 tons.	Twice the safe working load.
Multiple sheave block with safe working load over 20 tons up to and including 40 tons.	20 tons in excess of the safe working load.
Multiple sheave block over 40 tons.	One and a half times the safe working load.
Roller chains (pitched chains) used with hand operated chain falls, and rings, hooks, shackles, or swivels permanently attached thereto.	Do.
Chain fall blocks, used with roller chains (pitched chains), and rings, hooks, shackles, or swivels permanently attached thereto.	One and a half times the safe working load.

[1] The proof load applied to the block is equivalent to twice the maximum resultant load on the eye or pin when lifting the safe working load attached to a rope which passes around the sheave of the block. The proof load is, therefore, equal to four times the safe working load or twice the safe working load when the load is attached directly to the block instead of a rope passing around the sheave.

§ 91.37-35 Test and certification of wire rope.

(a) All wire rope used as shipboard cargo gear shall be able to withstand a breaking test load of at least five times the safe working load. In the case of gear with a lifting capacity of over 10 tons, the breaking test load of wire rope shall be at least four times the safe working load. All wire rope shall be identified and described in a wire rope certificate. Such certificate shall be furnished and attested to by the manufacturer or a testing agency and shall certify:

(1) The breaking test load of a sample of the wire rope, which should be at least five times the safe working load or at least four times the safe working load if part of gear with a lifting capacity of over 10 tons;

(2) The name and address of the manufacturer;

(3) The diameter of the rope in inches and/or fractions thereof;

(4) The number of strands and the number of wires in each strand;

(5) The quality of the wire (e.g., improved plow steel);

(6) The date of the test; and,

(7) The load at which the sample broke.

(b) The forms for the wire rope certificates shall be presented by and acceptable to associations or organizations approved by the Commandant and shall be suitable for the purposes described in this section.

(c) In addition to the manufacturers' or testing agencies' attestations, a sample of the wire rope may be tested to destruction if required by the marine inspector when a visual inspection indicates an apparent defective condition.

§ 91.37-40 Proof test of cargo gear as a unit.

(a) Winches with their accessory gear, including the derricks and attachments, at least once in each four years, shall be tested as a unit with proof loads exceeding the safe working load as set forth in Table 91.37-40(a).

TABLE 91.37-40(a).

Safe working load of assembled gear	Proof load
Not exceeding 20 tons	25 percent in excess.
Over 20 tons but not exceeding 50 tons.	5 tons in excess.
Over 50 tons	10 percent in excess.

(b) The proof load applied to winches and their gear shall be lifted with the ship's normal tackle including the winches and with the boom at an angle which should not be greater than 15 degrees to the horizontal or to the lowest angle approved in association with the design, or when these angles are impracticable to the lowest practicable angle. When the load has been lifted, it shall be swung as far as possible in both directions.

(1) Where electrical winches are fitted with electromagnetic or hydraulic brakes at the winch, mechanical brakes for manual operation will not be required, but if so fitted shall be in satisfactory operating condition.

(2) Current for electric winch operation during the test shall be taken from the ship's circuits. Shore current may be used if it passes through the ship's switchboard.

(c) Cranes and other hoisting machines with their accessory gear, at least once in each four years, shall be tested with a proof load which shall exceed the safe working load as set forth in Table 91.37-40(a).

(d) The proof load applied to cranes and hoists shall be lifted, topped and swung (slewed) as far as possible in each direction. If the boom of the crane has a movable radius, it shall be tested with a proof load as set forth in this section at the maximum and minimum radii of the boom. In the case of hydraulic cranes whose capacity is limited by pressure, and with which it is not possible to lift a load 25 percent in excess of the safe working load, the greatest possible load in excess of the safe working load shall be used. These tests and the amounts of the loads shall be recorded.

(e) After satisfactory completion of the proof load testing of the cargo gear in accordance with paragraphs (a), (b), (c) and (d) of this section, the cargo gear and all component parts shall be given a thorough visual examination, supplemented as necessary by other means such as a hammer test or with electronic or ultrasonic devices, to determine if any of the parts were damaged, deformed, or otherwise rendered unsafe for further use. If found defective, such gear shall be replaced.

(1) When the test is being conducted for the first time on a vessel, accessory gear shall be dismantled or disassembled for examination after the test. The sheaves and pins of the blocks included in this test need not be removed unless there appears to be evidence of deformation or failure.

(2) For subsequent tests such parts of the machinery and gear shall be dismantled and/or disassembled after the test as necessary to determine its suitability for continued service.

(f) Appropriate means shall be provided to prevent the foot of the boom from being accidentally lifted from the socket during the test.

(g) Vessels whose cargo gear has been in use but are without the valid registers and certificates described in § 91.25-25 shall be inspected for defective cargo gear. The gear shall then be tested and examined as prescribed in this section. If the movable weights for proof testing are not reasonably available, a spring or hydraulic scale certified for accuracy may be used. Whenever such scales are used, the proof load shall be applied with the boom swung out as far as possible in one direction and then in the other direction and at such intermediate positions as may be indicated. At any position, the indicator of the scale must maintain a constant reading under the proof load for a period of five minutes.

(h) On all types of winches and cranes efficient means shall be provided to stop and hold the proof load in any position, and the efficiency of such means shall be demonstrated.

(1) Electric winches, electrohydraulic winches fitted with electromagnetic or hydraulic brakes at the winch, or cranes shall be equipped so that a failure of the electric power shall stop the motion and set the brakes without any action on the part of the operator.

(2) Current for electric winches and crane operation during the tests shall be taken from the ship's circuits. Shore current may be used if it passes through the ship's switchboard.

§ 91.37-45 Marking of booms and cranes.

(a) The safe working load (abbreviated "SWL") for the assembled gear shall be marked on the heel of each boom with the minimum angle to the horizontal for which the gear is designed. These letters and figures shall be in contrasting colors to the background and at least one inch in height.

(b) Where the boom is rated at varying capacities depending on the radius, tables, indicating the maximum safe working loads for the various working angles of the boom and the maximum and minimum radii at which the boom may be safely used shall be conspicuously posted near the controls and

visible to the operator when working the gear.

§ 91.37-50 Use of wire rope and chains.

(a) An eye splice made in any wire rope used as cargo gear, with or without a thimble, shall be at least three tucks with whole strands and two tucks with one half the wire cut from the tucking stand: *Provided*, That this requirement shall not preclude the use of any other form of splice or connection if it is as efficient as the splice specified.

(b) Single wire rope cargo falls, wire rope pendants, topping lifts and preventers shall consist of clear lengths without splices except at the working ends. Wire rope clips shall not be used to form eyes in the working ends of single wire rope cargo falls.

(c) Wire rope shall not be used for shipboard cargo gear if in any length of 8 diameters, the number of visible broken wires exceeds ten percent of the total number of wires in the rope, or if the rope shows other signs of excessive wear, corrosion, kinking, or defect.

(d) Hoisting or sling chains used for shipboard cargo gear shall not be used if a length of chain has been stretched more than five percent of the original length, or the chain has become unsafe through over loading or faulty heat-treatment, or whenever other external defects are evident.

(e) Chains used for shipboard cargo gear shall not be shortened by knotting, bolting, or wiring the links. The use of chains having a knot or kink as shipboard cargo gear is prohibited.

§ 91.37-55 Annealing.

(a) Chains, hooks, rings, links, shackles, and swivels of wrought iron used as cargo gear shall be annealed at the following intervals:

(1) Wrought iron chains and gear in general use and of one-half inch or less, at least once in every six months.

(2) All other wrought iron chains and gear, including topping lift chains, in general use, at least once in every twelve months.

(b) The annealing shall be done in a suitable closed oven and not over an open fire. Wrought iron shall be annealed at a temperature of between 1100° and 1200° Fahrenheit for a period of between 30 and 60 minutes. After being annealed, the article shall be allowed to cool slowly and shall be then tested completely for defects.

(c) The heat-treatment of the cargo gear shall be done only by reputable firms having suitable equipment and personnel trained for this purpose. A certificate attesting to the annealing of all gear heat-treated shall be furnished to the vessel.

(d) The heat-treatment of chains, hooks, rings, links, shackles, and swivels of materials other than wrought iron used as cargo gear, if required, shall be effected in accordance with the manufacturer's instructions.

§ 91.37-60 Additions to gear.

(a) When articles of loose gear and/or wire rope conforming with the requirements in this subpart are added to installed gear, or used as replacements in such gear from time to time, a record shall be maintained on the vessel which shall identify each article and the certificate accompanying it.

§ 91.37-65 Alterations, renewals, or repairs of cargo gear.

(a) Whenever important repairs, renewals, or alterations are indicated or intended for the masts, booms, and permanent fittings of the cargo gear, such repairs, renewals, or alterations shall be undertaken only after compliance with the applicable provisions of § 91.45-1.

(b) Tests and examinations of the repairs, renewals, or alterations shall be in accordance with the provisions of § 91.37-40.

(c) When welding is used to lengthen, alter, or repair chains, rings, hooks, links, shackles, or swivels, they shall be properly heat-treated and shall before being again put into use, be tested and examined in accordance with the provisions of § 91.37-30.

§ 91.37-70 Responsibility of ship's officer for inspection of cargo gear.

(a) All wire rope, chains other than bridle chains attached to booms or masts, and all rings, hooks, links, shackles, swivels and blocks used in loading or unloading shall be visually

inspected by a ship's officer designated for that purpose by the master.

(b) These inspections by a ship's officer shall be made at frequent intervals, and in any event not less than once in each month.

(c) Immediately after such an inspection by a ship's officer notations of such an inspection shall be made in record form which shall be in or kept with the cargo gear register if carried. In addition, the same notations of inspections together with the date shall be entered in the Official Logbook for those vessels required to carry this record, or such information shall be kept with the log records maintained on vessels not required to carry the Official Logbook. (See § 91.37-75 for entries required to be kept.)

§ 91.37-75 Records regarding cargo gear.

(a) The cargo gear records described in this subpart shall be maintained on the vessel and shall be made available to Coast Guard officials upon request. These records shall be kept for the periods of time they are valid and, in addition, until the next Coast Guard inspection for certification of the vessel. The certificates of manufacturers and/or testing laboratories, companies, or organizations shall be maintained on the vessel so long as the gear described in such certificates is on board the vessel.

(b) The records of all the inspections of cargo gear made by the ship's officers in accordance with § 91.37-70 shall be maintained on the vessel for periods of time which agree with those periods as covered by the current Coast Guard certificate of inspection issued to the vessel. These records show the dates of inspections, identify articles inspected, the conditions observed, and the name of the officer performing the inspection.

(c) The records of all tests and examinations conducted by or under the supervision of surveyors of the organizations or associations approved by the Commandant shall be maintained on the vessel.

(d) The Coast Guard will not issue cargo gear certificates and/or registers. The Coast Guard's records of inspections, tests, and examinations of a particular vessel's cargo gear made by a marine inspector or conducted under the supervision of the Coast Guard will be maintained in the office of the Officer in Charge, Marine Inspection, having jurisdiction over the vessel at the time such work was performed. The original certificates or certified copies of certificates of manufacturers and/or testing laboratories, companies, or organizations for loose cargo gear, wire rope, or the annealing of gear shall be maintained on the vessel.

§ 91.37-80 Advance notice that cargo gear testing is desired.

(a) The owner, agent, or master of a vessel shall give an advance notice when it is desired that the tests and examinations of cargo gear be made by or under the supervision of the marine inspector. This advance notice shall be given to the Officer in Charge, Marine Inspection, in whose marine inspection zone the vessel is available for such inspection and examination.

(b) For the initial inspection and examination of cargo gear by the Coast Guard, the advance notice shall be to the cognizant Officer in Charge, Marine Inspection, as early as possible and shall include sketches and/or drawings showing each unit of cargo gear, the identification of component parts and the safe working loads. Copies of original certificates of manufacturers and/or testing laboratories, companies, or organizations maintained on the vessel may be accepted by the cognizant Officer in Charge, Marine Inspection, when satisfied such certificates properly describe the qualities of the component parts of the gear in question.

§ 91.37-85 Responsibility for conducting required tests and examinations.

(a) The vessel's owners and/or operators shall furnish and pay the expenses required in conducting the tests and examinations prescribed by the regulations in this subpart, including the supplying of all instruments, other equipment, and personnel including personnel supervision for performance of all work required.

(b) The Coast Guard's participation in these required tests and examinations shall be confined to witnessing

required tests and examinations with the view to determining whether or not the gear is satisfactory for the purpose intended. In the event it is determined that the gear is defective or unable to meet the standards set forth in this subpart such gear, or portions thereof, shall be replaced to the satisfaction of the Officer in Charge, Marine Inspection, having jurisdiction over the vessel.

Subpart 91.40—Drydocking

§ 91.40-1 When required.

(a) Except for extensions as authorized by the Commandant, all vessels shall be placed in drydock or hauled out for examination within the periods set forth in this paragraph, depending upon the service.

(1) Each vessel shall be drydocked or hauled out at intervals not to exceed 24 months if it operates in salt water an aggregate of more than 12 months in the 24-month period since it was last drydocked or hauled out.

(2) Each vessel shall be drydocked or hauled out at intervals not to exceed 36 months if it operates in salt water an aggregate of more than 3 months but not more than 6 months in each 12-month period since it was last drydocked or hauled out. When a vessel exceeds an aggregate of 6 months service in salt water in any 12-month period since it was last drydocked or hauled out, it shall be drydocked or hauled out within 6 months after the end of that period or within the 36-month interval, whichever is earlier.

(3) Each vessel shall be drydocked or hauled out at intervals of 48 months if it operates in salt water an aggregate of more than one month but not more than 3 months in each 12-month period since it was last drydocked or hauled out.

(4) Each vessel shall be drydocked or hauled out at intervals not to exceed 60 months if it operates exclusively in fresh water or if it operates in salt water an aggregate not exceeding 1 month in each 12-month period since it was last drydocked or hauled out.

[CGFR 65-50, 30 FR 16974, Dec. 30, 1965, as amended by CGFR 68-32, 33 FR 5718, Apr. 12, 1968; CGFR 68-63, 33 FR 8227, June 1, 1968]

§ 91.40-5 Notice by owner.

(a) The master, owner, or agent shall notify the Officer in Charge, Marine Inspection, when any vessel is to be placed on a drydock in order that an examination of the underwater portion of the vessel may be made if deemed necessary.

Subpart 91.45—Repairs and Alterations

§ 91.45-1 Notice required.

(a) No repairs or alterations affecting the safety of the vessel with regard to the hull, machinery, or equipment, shall be made without the knowledge of the Officer in Charge, Marine Inspection.

(b) Drawings of alterations shall be approved before work is started unless deemed unnecessary by the Officer in Charge, Marine Inspection.

(c) Drawings will not be required for repairs in kind.

§ 91.45-5 Inspection required.

(a) An inspection either general or partial depending upon the circumstances shall be made whenever any important repairs or alterations are undertaken.

Subpart 91.50—Special Operating Requirements

§ 91.50-1 Inspection and testing required when making alterations, repairs, or other such operations involving riveting, welding, burning or like fire-producing actions.

(a) The provisions of "Standard for The Control of Gas Hazards on Vessels to be Repaired," NFPA No. 306, published by National Fire Protection Association, 60 Batterymarch Street, Boston, Mass., 02110, shall be used as a guide in conducting the inspections and issuance of certificates required by this section.

(b) Until an inspection has been made to determine that such operation can be undertaken with safety, no alterations, repairs, or other such operations involving riveting, welding, burning, or like fire-producing actions shall be made:

(1) Within or on the boundaries of cargo tanks which have been used to carry combustible liquids or chemicals in bulk; or,

(2) Within spaces adjacent to cargo tanks which have been used to carry Grade D combustible liquid cargo, except where the distance between such cargo tanks and the work to be performed is not less than twenty-five (25) feet; or,

(3) Within or on the boundaries of fuel tanks; or,

(4) To pipelines, heating coils, pumps, fittings, or other appurtenances connected to such cargo or fuel tanks; or,

(5) On miscellaneous vessels such as cable, salvage, pile driving, and oil drilling rig vessels that have been specially authorized to carry Grade B or Grade C flammable liquid cargo in bulk by the Commandant, within or on the boundaries of such cargo tanks or within spaces adjacent to such cargo tanks.

(c) Such inspections shall be made and evidenced as follows:

(1) In ports or places in the United States or its territories and possessions the inspection shall be made by a marine chemist certificated by the National Fire Protection Association; however, if the services of such certified marine chemist are not reasonably available, the Officer in Charge, Marine Inspection, upon the recommendation of the vessel owner and his contractor or their representative, shall select a person who, in the case of an individual vessel, shall be authorized to make such inspection. If the inspection indicates that such operations can be undertaken with safety, a certificate setting forth the fact in writing and qualified as may be required, shall be issued by the certified marine chemist or the authorized person before the work is started. Such qualifications shall include any requirements as may be deemed necessary to maintain, insofar as can reasonably be done, the safe conditions in the spaces certified throughout the operation and shall include such additional tests and certifications as considered required. Such qualifications and requirements shall include precautions necessary to eliminate or minimize hazards that may be present from protective coatings or residues from cargoes.

(2) When not in such a port or place, and a marine chemist or such person authorized by the Officer in Charge, Marine Inspection, is not reasonably available, the inspection shall be made by the senior officer present and a proper entry shall be made in the vessel's logbook.

(d) It shall be the responsibility of the senior officer present to secure copies of certificates issued by the certified marine chemist or such person authorized by the Officer in Charge, Marine Inspection. It shall be the responsibility of the senior officer present, insofar as the persons under his control are concerned, to maintain a safe condition on the vessel by full observance of all qualifications and requirements listed by the marine chemist in the certificate.

Subpart 91.55—Plan Approval

AUTHORITY: Interpret or apply R.S. 4490, as amended, sec. 3, 24 Stat. 129, as amended; 46 U.S.C. 482, 483.

§ 91.55-1 General.

(a) The following list of required plans is general in character, but includes all plans which normally show construction and safety features coming under the cognizance of the Coast Guard. In the case of a particular vessel, all of the plans enumerated may not be applicable, and it is intended that only those plans and specifications be submitted as will clearly show the vessel's arrangement, construction and required equipment.

(b) In the following list of required plans, the items which must be approved by the American Bureau of Shipping for vessels classed by that organization are indicated by an asterisk. When prints bearing record of such approval by the American Bureau of Shipping are forwarded to the Coast Guard they will in general be accepted as satisfactory except insofar as the law or the Coast Guard regulations contain requirements which are not covered by the American Bureau of Shipping.

§ 91.55–5 Plans and specifications required for new construction.

(a) *General.* (1) Specifications.

(2) General Arrangement Plan of decks, holds, inner bottoms, etc., and including inboard and outboard profile.

(b) *Hull structure.*[1] (1) *Inner Bottom Plating and Framing.

(2) *Midship Section.

(3) *Shell Plating and Framing.

(4) *Stem, Stern Frame, and Rudder.

(5) *Structural Deck Plans for Strength Decks.

(6) *Pillars and Girders.

(7) *Watertight and Oiltight Bulkheads.

(8) *Foundations for Main Machinery and Boilers.

(9) *Arrangement of Ports, Doors, and Airports in Shell Plating.

(10) *Hatch Coamings and Covers in Weather and Watertight Decks.

(11) *Details of Watertight Doors and Operating Gear.

(12) *Scuppers and Drains Penetrating Shell Plating.

(13) *Arrangement of the cargo gear including a stress diagram. The principal details of the gear and the safe working load for each component part shall be shown.

(c) *Hull calculations, etc.* Required only when a stability test is to be performed.

(1) Lines (for information).

(2) Curves of Form.

(3) Capacity Plan showing capacities and vertical and longitudinal centers of gravity of cargo spaces, tanks, etc. (for information).

(4) Tank Sounding tables (for information).

(5) Draft Mark Locations (for information).

(d) *Fire control.* (1) General arrangement plans showing for each deck the control stations, the various fire sections enclosed by fire resisting bulkheads, the arrangement of the alarm and extinguishing systems, the fire extinguishers, means of access to different compartments and decks and the ventilation system including location of ventilation shutdowns, positions of dampers and the numbers identifying each system.

(2) Ventilation diagram including dampers and other fire control features.

(3) Details of alarm systems.

(4) Details of extinguishing systems, including fire mains, carbon dioxide, foam and sprinkling systems.

(e) *Marine engineering.* For plans required for marine engineering equipment and systems, see Subchapter F (Marine Engineering) of this chapter.

(f) *Electrical engineering.* For plans required for electrical engineering, equipment and systems, see Subchapter J (Electrical Engineering) of this chapter.

(g) *Lifesaving equipment.* (1) These plans are to show the location and arrangement of embarkation decks, all overboard discharges and projections in way of launching lifeboats, weights of lifeboats fully equipped and loaded, working loads of davits and winches, types and sizes of falls, the manufacturer's name and identification for all equipment, and all other relevant and necessary information.

(i) Arrangement of lifeboats.

(ii) Arrangement of davits.

(iii) Location and stowage of liferafts and buoyant apparatus.

(h) *Crew's accommodations.* (1) Arrangement plans showing accommodations, ventilation, escapes, hospital, and sanitary facilities for all crewmembers.

§ 91.55–10 Plans required for alterations of existing vessels.

(a) In the event of alterations involving the safety of the vessel, the applicable plans shall be submitted for approval covering the proposed work except as modified by § 91.45–1. The general scope of the plans shall be as noted in § 91.55–5.

§ 91.55–15 Procedure for submittal of plans.

(a) As the relative location of shipyards, design offices, and Coast Guard offices vary throughout the country, no specific routing will be required in the submittal of plans. In general, one of the following procedures would

[1] The asterisk (*) indicates items which may require approval by the American Bureau of Shipping for vessels classed by that society.

apply, but in a particular case, if a more expeditious procedure can be used, there will be no objection to its adoption.

(1) The plans may be submitted to the Officer in Charge, Marine Inspection, in the district in which the vessel is to be built. This procedure will be most expeditious in the case of those offices where personnel and facilities are available for examination and approval of the plans locally.

(2) The plans may be submitted directly to the Commandant (MMT), U.S. Coast Guard, Washington, D.C. 20590. In this case, the plans will be returned directly to the submitter, with a copy of the action being forwarded to the interested Officer in Charge, Marine Inspection.

(3) The plans may be submitted directly to field technical offices.

(i) Commander, 3d Coast Guard District(mmt) Governors Island, New York, N.Y. 10004, for the geographical area covered by the 1st and 3d Coast Guard Districts.

(ii) Commander, 8th Coast Guard District(mmt), Hale Boggs Federal Building, 500 Camp Street, New Orleans, La. 70130, for the geographical area covered by the 2d, 7th, and 8th Coast Guard Districts.

(iii) Commander, 12th Coast Guard District (mmt), 630 Sansome St., San Francisco, Calif., 94501, for geographical area covered by 11th, 12th, 13th, 14th and 17th Coast Guard Districts.

(iv) Commander, 9th Coast Guard District (mmt), Room 2019, 1240 East Ninth Street, Cleveland, Ohio 44199, for geographical area covered by the 9th Coast Guard District.

(v) Commander, 5th Coast Guard District(mmt), Federal Building, 431 Crawford Street, Portsmouth, Va. 23705, for the geographical area covered by the 5th Coast Guard District.

(4) In the case of classed vessels, upon specific request by the submitter, the American Bureau of Shipping will arrange to forward the necessary plans to the Coast Guard indicating its action thereon. In this case, the plans will be returned as noted in paragraph (a)(2) of this section.

(R. S. 4472, as amended (46 U.S.C. 170); sec. 201, 86 Stat. 427, as amended (46 U.S.C. 391a); sec. 6(b)(1), 80 Stat. 937 (49 U.S.C. 1655(b)(1); 49 CFR 1.46 (b), (t), (n)(4); 5 U.S.C. 552; 14 U.S.C. 633)

[CGFR 65-50, 30 FR 16974, Dec. 30, 1965, as amended by CGFR 66-33, 31 FR 15284, Dec. 6, 1966; CGFR 68-32, 33 FR 5718, Apr. 12, 1968; CGFR 69-116, 35 FR 6861, Apr. 30, 1970; CGD 73-96, 42 FR 49025, Sept. 26, 1977; CG 78-108, 43 FR 46546, Oct. 10, 1978]

§ 91.55-20 Number of plans required.

(a) Three copies of each plan are normally required so that one can be returned to the submitter. If the submitter desires additional approved plans, a suitable number should be submitted to permit the required distribution.

[CGFR 65-50, 30 FR 16974, Dec. 30, 1965, as amended by CGFR 69-116, 35 FR 6861, Apr. 30, 1970]

Subpart 91.60—Certificates Under International Convention for Safety of Life at Sea, 1960

§ 91.60-1 Application.

(a) The provisions of this subpart, with the exception of §§ 91.60-30 and 91.60-40(e), shall apply to all cargo vessels on an international voyage other than nuclear vessels.

(b) The provision of §§ 91.60-30, 91.60-35 and 91.60-40(e) shall apply to all nuclear cargo vessels on an international voyage.

§ 91.60-5 Cargo Ship Safety Construction Certificate.

(a) All vessels on an international voyage are required to have a Cargo Ship Safety Construction Certificate. This certificate shall be issued by the U.S. Coast Guard or the American Bureau of Shipping to certain vessels on behalf of the United States of America as provided in Regulation 12, Chapter I, of the International Convention for Safety of Life at Sea, 1960.

(b) All such vessels shall meet the applicable requirements of this chapter for vessels on an international voyage.

§ 91.60-10 Cargo Ship Safety Equipment Certificate.

(a) All vessels on an international voyage are required to have a Cargo Ship Safety Equipment Certificate.

(b) All such vessels shall meet the applicable requirements of this chapter for vessels on an international voyage.

§ 91.60-15 Cargo Ship Safety Radiotelegraphy Certificate.

(a) The application for Cargo Ship Safety Radiotelegraphy Certificate is made on FCC Form 801 to the local office of the Federal Communications Commission.

(b) Where applicable, a Cargo Ship Safety Radiotelegraphy Certificate will be issued by the Federal Communications Commission to a vessel meeting its requirements for a vessel fitted with a radiotelegraph installation.

§ 91.60-20 Cargo Ship Safety Radiotelephony Certificate.

(a) The application for a Cargo Ship Safety Radiotelephony Certificate is made on FCC Form 801 to the local office of the Federal Communications Commission.

(b) Where applicable, a Cargo Ship Safety Radiotelephony Certificate will be issued by the Federal Communications Commission to a vessel meeting its applicable requirements for a vessel fitted with a radiotelephone installation.

§ 91.60-25 Exemption Certificate.

(a) A vessel may be exempted by the Commandant from complying with certain requirements of the Convention under his administration upon request made in writing to him and transmitted via the Officer in Charge, Marine Inspection.

(b) When an exemption is granted to a vessel by the Commandant under and in accordance with the Convention, an Exemption Certificate describing such exemption shall be issued through the appropriate Officer in Charge, Marine Inspection, in addition to other required certificates.

§ 91.60-30 Nuclear Cargo Ship Safety Certificate.

(a) All nuclear cargo vessels on an international voyage are required to have a Nuclear Cargo Ship Safety Certificate.

(b) All such vessels shall meet the applicable requirements of this chapter for nuclear vessels on an international voyage.

(c) Nuclear vessels cannot be exempted from any requirements of the Convention.

§ 91.60-35 Posting of Convention certificates.

(a) The certificates described in this subpart, or certified copies thereof, when issued to a vessel shall be posted in a prominent and accessible place on the vessel.

(b) The certificates shall be carried in a manner similar to that described in § 91.01-5 for a certificate of inspection.

§ 91.60-40 Duration of certificates.

(a) A Cargo Ship Safety Equipment Certificate shall be issued for a period of not more than 24 months.

(b) A Cargo Ship Safety Construction Certificate shall be issued for a period of not more than 60 months.

(c) A Cargo Ship Safety Radiotelegraphy Certificate and a Cargo Ship Safety Radiotelephony Certificate shall be issued for a period of not more than 12 months.

(d) An Exemption Certificate shall not be valid for longer than the period of the certificate to which it refers.

(e) The Nuclear Cargo Ship Safety Certificate shall be issued for a period of not more than 12 months.

(f) A Convention certificate may be withdrawn, revoked, or suspended at any time when it is determined the vessel is no longer in compliance with applicable requirements. (See § 2.01-70 of this chapter for procedures governing appeals.)

§ 91.60-45 American Bureau of Shipping.

(a) The American Bureau of Shipping, with its home office at 45 Broad Street, New York, N.Y., 10004, is hereby designated as an organization duly authorized to issue the "Cargo Ship Safety Construction Certificate" to certain cargo ships on behalf of the United States of America as provided in Regulation 12, Chapter I, of the International Convention for Safety of Life at Sea, 1960, and Executive Order 11239 and the certificate shall be subject to the requirements in this sub-

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part. The American Bureau of Shipping is authorized to place the official seal of the United States of America on the certificate. This designation and delegation to the American Bureau of Shipping shall be in effect from May 26, 1965, until terminated by proper authority and notice of cancellation is published in the FEDERAL REGISTER.

(b) At the option of the owner or agent of a vessel on an international voyage and on direct application to the American Bureau of Shipping, the Bureau may issue to such vessel a Cargo Ship Safety Construction Certificate, having a period of validity of not more than 60 months after ascertaining that the vessel:

(1) Has met the applicable requirements of the Convention; and,

(2) Is currently classed by the Bureau and classification requirements have been dealt with to the satisfaction of the Bureau.

(c) When the Bureau determines that a vessel to which it has issued a Cargo Ship Safety Construction Certificate no longer complies with the Bureau's applicable requirements for classification, the Bureau shall immediately furnish to the Coast Guard all relevant information, which will be used by the Coast Guard to determine whether or not to withdraw, revoke or suspend the Cargo Ship Safety Construction Certificate.

(Sec. 25, 41 Stat. 998, as amended, sec. 701, 62 Stat. 731, as amended; 46 U.S.C. 881, 18 U.S.C. 701)

PART 92—CONSTRUCTION AND ARRANGEMENT

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AUTHORITY: R.S. 4405, as amended, 4462, as amended, sec. 6(b)(1), 80 Stat. 938; 46

U.S.C. 375, 416, 49 U.S.C. 1655(b); 49 CFR 1.46(b) (35 FR 4959). Interpret or apply R.S. 4417, as amended, 4418, as amended, 4426, as amended, 4488, as amended, 4490, as amended, sec. 10, 35 Stat. 428, as amended, 41 Stat. 305 as amended, secs. 1, 2, 49 Stat. 1544, 1545, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 391, 392, 404, 481, 482, 395, 363, 367, 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 FR 9671, 3 CFR, 1965 Supp., unless otherwise noted.

SOURCE: CGFR 65-50, 30 FR 16983, Dec. 30, 1965, unless otherwise noted.

Subpart 92.01—Hull Structure

§ 92.01-1 Application.

(a) The provisions of this subpart, with the exception of § 92.01-90, shall apply to all vessels contracted for on or after November 19, 1952. Vessels contracted for prior to November 19, 1952, shall meet the requirements of § 92.01-90.

§ 92.01-5 Vessels subject to load line.

(a) For vessels assigned a load line, see Subchapter E (Load Lines) of this chapter, for special requirements as to strength, closure of openings, etc.

(Sec. 2, 45 Stat. 1493, as amended, sec. 2, 49 Stat. 888, as amended; 46 U.S.C. 85a, 88a)

§ 92.01-10 Structural standards.

(a) In general, compliance with the standards established by the American Bureau of Shipping, see Subpart 90.35 of this subchapter, will be considered as satisfactory evidence of the structural efficiency of the vessel. However, in special cases, a detailed analysis of the entire structure or some integral part may be made by the Coast Guard to determine the structural requirements.

§ 92.01-13 Sliding watertight doors.

(a) Sliding watertight doors, where fitted, shall be designed, tested, and installed in accordance with Subpart 163.001 of Subchapter Q (Specifications) of this chapter.

§ 92.01-15 Special consideration.

(a) Special consideration will be given to the structural requirements for small vessels or vessels of an unusual design not contemplated by the rules of the American Bureau of Shipping.

§ 92.01-90 Vessels contracted for prior to November 19, 1952.

(a) Existing structure previously approved will be considered satisfactory so long as it is maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original construction.

Subpart 92.05—General Fire Protection

§ 92.05-1 Fire hazards to be minimized.

(a) The general construction of the vessel shall be such as to minimize fire hazards insofar as is reasonable and practicable.

§ 92.05-5 Woodwork insulated from heated surfaces.

(a) Internal combustion engine exhausts, boiler and galley uptakes, and similar sources of ignition shall be kept clear of and suitably insulated from any woodwork or other combustible matter.

§ 92.05-10 Lamp room construction.

(a) Lamp, paint, and oil lockers and similar compartments shall be constructed of steel or shall be wholly lined with metal.

§ 92.05-15 Segregation of spaces containing the emergency source of electric power.

(a) The provisions of this section shall apply to all vessels contracted for on or after October 1, 1958.

(b) When a compartment containing the emergency source of electric power, or vital components thereof, adjoins a space containing either the ship's service generators or machinery necessary for the operation of the ship's service generators, all common bulkheads and/or decks shall be protected by approved "structural insulation" or other approved material. This protection shall be such as to be capable of preventing an excessive temperature rise in the space containing

the emergency source of electric power, or vital components thereof, for a period of at least one hour in the event of fire in the adjoining space. Bulkheads or decks meeting Class A-60 requirements, as defined by § 72.05-10 of Subchapter H (Passenger Vessels) of this chapter, will be considered as meeting the requirements of this paragraph.

Subpart 92.07—Structural Fire Protection

§ 92.07-1 Application.

(a) The provisions of this subpart, with the exception of § 92.07-90, shall apply to all vessels of 4,000 gross tons and over contracted for on or after January 1, 1962. Such vessels contracted for prior to January 1, 1962, shall meet the requirements of § 92.07-90(a).

(b) The provisions of this subpart, with the exception of § 92.07-90, shall apply to all industrial vessels of 300 gross tons and over but less than 4,000 gross tons, contracted for on or after July 1, 1968, which carry in excess of 12 industrial personnel. Such vessels contracted for prior to July 1, 1968, shall meet the requirements of § 92.07-90(b).

[CGFR 67-90, 33 FR 1015, Jan. 26, 1968]

§ 92.07-5 Definitions.

(a) *Standard fire test.* A "standard fire test" is one which develops in the test furnace a series of time temperature relationships as follows:

5 minutes—1,000° F.
10 minutes—1,300° F.
30 minutes—1,550° F.
60 minutes—1,700° F.

(b) *"A" Class divisions.* Bulkheads or decks of the "A" Class shall be composed of steel or equivalent metal construction, suitably stiffened and made intact with the main structure of the vessel; such as shell, structural bulkheads, and decks. They shall be so constructed, that if subjected to the standard fire test, they would be capable of preventing the passage of flame and smoke for one hour.

(c) *"B" Class bulkheads.* Bulkheads of the "B" Class shall be constructed with approved incombustible materials and made intact from deck to deck and to shell or other boundaries. They shall be so constructed that, if subjected to the standard fire test, they would be capable of preventing the passage of flame for one half hour.

(d) *"C" Class divisions.* Bulkheads or decks of the "C" Class shall be constructed of approved incombustible materials, but need meet no requirements relative to the passage of flame.

(e) *Steel or other equivalent metal.* Where the term "steel or other equivalent metal" is used in this subpart, it is intended to require a material which, by itself or due to insulation provided, has structural and integrity qualities equivalent to steel at the end of the applicable fire exposure.

(f) *Approved material.* Where in this subpart approved materials are required, they refer to materials approved under the applicable subparts of Subchapter Q (Specifications) of this chapter, as follows:

Deck Coverings	164.006
Structural Insulations	164.007
Bulkhead Panels	164.008
Incombustible Materials	164.009
Interior Finishes	164.012

(g) *Stairtower.* A stairtower is a stairway which penetrates more than a single deck within the same enclosure.

[CGFR 65-50, 30 FR 16983, Dec. 30, 1965, as amended by CGFR 67-90, 33 FR 1015, Jan. 26, 1968; CGD 75-032, 41 FR 17910, Apr. 29, 1976]

§ 92.07-10 Construction.

(a) The hull, superstructure, structural bulkheads, decks, and deckhouses shall be constructed of steel. Alternately, the Commandant may permit the use of other suitable material in special cases, having in mind the risk of fire.

(b) Bulkheads of galleys, paint and lamp lockers, and emergency generator rooms shall be of "A" Class construction.

(c) The boundary bulkheads and decks separating the accommodations and control stations from cargo and machinery spaces, galleys, main pantries and storerooms, other than small service lockers, shall be of "A" Class construction.

(d) Within the accommodation and service areas the following conditions shall apply:

(1) Corridor bulkheads in accommodation spaces shall be of the "A" or "B" Class intact from deck to deck. Stateroom doors in such bulkheads may have a louver in the lower half.

(2) Stairtowers, elevator, dumbwaiter, and other trunks shall be of "A" Class construction.

(3) Bulkheads not already specified to be of "A" or "B" Class construction may be of "A", "B", or "C" Class construction.

(4) The integrity of any deck in way of a stairway opening, other than a stairtower, shall be maintained by means of "A" or "B" class bulkheads and doors at one level. The integrity of a stairtower shall be maintained by "A" Class doors at every level. The doors shall be of self-closing type. Holdback hooks, or other means of permanently holding the door open will not be permitted. However, magnetic holdbacks operated from the bridge or from other suitable remote control positions are acceptable.

(5) Interior stairs, including stringers and treads, shall be of steel.

(6) Except for washrooms and toilet spaces, deck coverings within accommodation spaces shall be of an approved type. However, overlays for leveling or finishing purposes which do not meet the requirements for an approved deck covering may be used in thicknesses not exceeding ⅜ of an inch.

(7) Ceilings, linings, and insulation, including pipe and duct laggings, shall be of approved incombustible materials.

(8) Any sheathing, furring or holding pieces incidental to the securing of any bulkhead, ceiling, lining, or insulation shall be of approved incombustible materials.

(9) Bulkheads, linings, and ceilings may have a combustible veneer within a room not to exceed 2/28 of an inch in thickness. However, combustible veneers, trim, decorations, etc., shall not be used in corridors or hidden spaces. This is not intended to preclude the use of an approved interior finish or a reasonable number of coat of paint.

(e) Wood hatch covers may be used between cargo spaces or between stores spaces. Hatch covers in other locations shall be of steel or equivalent metal construction. Tonnage openings shall be closed by means of steel plates.

(f) Nitrocellulose or other highly flammable or noxious fume-producing paints or lacquers shall not be used.

[CGFR 65-50, 30 FR 16983, Dec. 30, 1965, as amended by CGFR 67-90, 33 FR 1015, Jan. 26, 1968]

§ 92.07-90 Vessels contracted for prior to July 1, 1968.

(a) For all vessels of 4,000 gross tons and over contracted for prior to January 1, 1962, existing structure arrangements and materials previously approved will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original construction. Major alterations and conversions shall be in compliance with the provisions of this subpart to the satisfaction of the Officer in Charge, Marine Inspection.

(b) For industrial vessels of 300 gross tons and over but less than 4,000 gross tons, contracted for prior to July 1, 1968, which carry in excess of 12 industrial personnel, existing structure arrangements and materials previously approved will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original construction. Major alterations and conversions shall be in compliance with this subpart to the satisfaction of the Officer in Charge, Marine Inspection.

[CGFR 67-90, 33 FR 1016, Jan. 26, 1968]

Subpart 92.10—Means of Escape

§ 92.10-1 Application.

(a) The provisions of this subpart, with the exception of § 92.10-90, shall apply to all vessels contracted for on or after November 19, 1952. Vessels

contracted for prior to November 19, 1952, shall meet the requirements of § 92.10-90.

§ 92.10-5 Two means required.

(a) There shall be at least two means of escape from all general areas accessible to the passengers, if carried, or where the crew may be quartered or normally employed. At least one of these two means of escape shall be independent of watertight doors.

§ 92.10-10 Location.

(a) The two means of escape shall be as remote as practicable so as to minimize the possibility of one incident blocking both escapes.

§ 92.10-15 Vertical ladders not accepted.

(a) Vertical ladders and deck scuttles shall not in general be considered satisfactory as one of the required means of escape. However, where it is demonstrated that the installation of a stairway would be impracticable, a vertical ladder may be used as the second means of escape.

§ 92.10-20 No means for locking doors.

(a) No means shall be provided for locking doors giving access to either of the two required means of escape, except that crash doors or locking devices, capable of being easily forced in an emergency, may be employed provided a permanent and conspicuous notice to this effect is attached to both sides of the door. This paragraph shall not apply to outside doors to deckhouses where such doors are locked by key only and such key is under the control of one of the vessel's officers.

§ 92.10-25 Stairway size.

(a) Stairways shall be of sufficient width having in mind the number of persons having access to such stairs for escape purposes.

(b) Vessels contracted for on or after January 1, 1959, shall meet the requirements of this paragraph. Special consideration for relief may be given in the case of small vessels if it is shown to be unreasonable or impracticable to meet the requirements.

(1) All interior stairways, other than those within the machinery spaces or cargo holds, shall have a minimum width of 28 inches. The angle of inclination with the horizontal of such stairways shall not exceed 50 degrees.

§ 92.10-30 Dead end corridors.

(a) Dead end corridors, or the equivalent, more than 40 feet in length shall not be permitted.

§ 92.10-35 Public spaces.

(a) In all cases, public spaces having a deck area of over 300 square feet shall have at least two exits. Where practicable, these exits shall give egress to different corridors, rooms, or spaces to minimize the possibility of one incident blocking both exits.

§ 92.10-40 Access to lifeboats.

(a) The stairways, corridors, and doors shall be so arranged as to permit a ready and direct access to the various lifeboat embarkation areas.

§ 92.10-45 Weather deck communications.

(a) Vertical communication shall be provided between the various weather decks by means of permanent inclined ladders.

§ 92.10-90 Vessels contracted for prior to November 19, 1952.

(a) Existing arrangements previously approved will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original design: *Provided,* That in no case will a greater departure from the standards of §§ 92.10-5 through 92.10-45 be permitted than presently exists. Nothing in this paragraph shall be construed as exempting any vessel from having 2 means of escape from all main compartments which are accessible to the passengers, if carried, or where the crew are normally quartered or employed.

Subpart 92.15—Ventilation

§ 92.15-1 Application.

The provisions of this subpart, with the exception of § 92.15-90, shall apply

to all vessels contracted for on or after November 19, 1952. Vessels contracted for prior to November 19, 1952, shall meet the requirements of § 92.15-90.

§ 92.15-5 Vessels using fuel having a flashpoint of 110 degrees or lower.

(a) Where liquid fuel having a flashpoint of 110 degrees F. or lower is used for main or auxiliary machinery or for starting purposes, the spaces containing such machinery or fuel tanks shall have ventilation as required by this section.

(1) At least 2 ventilators fitted with cowls or their equivalent for the purpose of properly and effectively ventilating the bilges of every engine and fuel-tank compartment in order to remove any flammable or explosive gases.

(2) Vessels constructed so that the greater portions of the bilges under the engine and fuel tanks are open or exposed to the natural atmosphere at all times are not required to be fitted with ventilators.

§ 92.15-10 Ventilation for closed spaces.

(a) Except as noted in paragraph (c) of this section, all enclosed spaces within the vessel shall be properly vented or ventilated. Means shall be provided to close off all vents and ventilators.

(b) Means shall be provided for stopping all fans in ventilation systems serving machinery and cargo spaces and for closing all doorways, ventilators and annular spaces around funnels and other openings to such spaces, from outside these spaces, in case of fire.

(c) On unmanned cargo barges not fitted with a fixed bilge system, vents and ventilators may be omitted from void spaces.

(d) The ventilation of spaces which are "specially suitable for vehicles" shall be in accordance with the provisions of this paragraph. In addition, if vehicles are operated inside of enclosed spaces, the ventilation shall be in accordance with Subpart 97.80 of this subchapter.

(1) Areas below the weather deck shall be provided with continuous pressure-positive ventilation at each level on which vehicles are transported.

(2) The quantity of ventilating air shall be not less than 1 cubic foot per minute per square foot of deck area.

(3) The ventilation system shall be such as to prevent air stratification as well as to prevent the accumulation of air pockets.

(4) An alarm system shall be provided which will indicate the loss of required ventilation. The alarm location shall be in a normally manned space acceptable to the Commandant.

(e) For requirements regarding controls of electrically powered ventilation systems, see Subchapter J (Electrical Engineering) of this chapter.

[CGFR 65-50, 30 FR 16983, Dec. 30, 1965, as amended by CGFR 66-33, 31 FR 15284, Dec. 5, 1966]

§ 92.15-15 Ventilation for crew quarters and, where provided, passenger spaces.

(a) All living spaces shall be adequately ventilated in a manner suitable to the purpose of the space.

(b) On vessels of 100 gross tons and over, except for such spaces as are so located that under all ordinary conditions of weather, windows, ports, skylights, etc., and doors to passageways can be kept open, all crew spaces shall be ventilated by a mechanical system, unless it can be shown that a natural system will provide adequate ventilation. However, vessels which trade regularly in the tropics shall, in general, be fitted with a mechanical ventilation system.

§ 92.15-90 Vessels contracted for prior to November 19, 1952.

(a) Existing arrangements previously approved will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original design provided that in no case will a greater departure from the standards of §§ 92.15-5 through 92.15-15 be permitted than presently exists.

Subpart 92.20—Accommodations for Officers and Crew

§ 92.20-1 Application.

(a) The provisions of this subpart, with the exception of § 92.20-90, shall apply to all vessels of 100 gross tons and over contracted for on or after November 19, 1952. Vessels of 100 gross tons and over contracted for prior to November 19, 1952, shall meet the requirements of § 92.20-90.

(b) Vessels of less than 100 gross tons shall meet the applicable requirements of this subpart insofar as is reasonable and practicable.

§ 92.20-5 Intent.

(a) It is the intent of this subpart that the accommodations provided for officers and crew on all vessels shall be securely constructed, properly lighted, heated, drained, ventilated, equipped, located, arranged, and, where practicable, shall be insulated from undue noise and effluvia.

(b) The crew referred to herein includes all persons, except the licensed officers, regularly employed on board any vessel. Where the requirements for the accommodation of licensed officers are not otherwise specified, they shall be of at least equivalent to that indicated herein for the crew.

(c) For the purpose of this subpart, the term "crew spaces" shall include sleeping rooms, messrooms, recreational rooms, toilet and shower spaces, etc., which are intended for the exclusive use of the crew.

§ 92.20-10 Location of crew spaces.

(a) Crew spaces shall be located, where practicable, so that the maximum amount of fresh air and light are obtainable, having due regard to the service of the vessel and the requirements of other space users.

(b) Crew quarters shall not be located farther forward in a vessel than a vertical plane located at 5 percent of the vessel's length abaft the forward side of the stem at the designed summer load waterline. However, for vessels in other than ocean or coastwise service, this distance need not exceed 28 feet. For the purpose of this paragraph, the length shall be as defined in § 42.13-15 of Subchapter E (Load Lines) of this chapter. No section of the deck of the crew spaces shall be below the deepest load line, except that in special cases, the Commandant may approve such an arrangement: *Provided,* That in no case shall the deck head of the crew space be below the deepest load line.

(c) Hawse pipes or chain pipes shall not pass through crew spaces.

(d) There shall be no direct communication, except through solid, close fitted doors or hatches between crew spaces and chain lockers, cargo, or machinery spaces.

(e) There shall be no access, vents, or sounding tubes from fuel or cargo oil tanks opening into crew spaces, except that sounding tubes and access openings may be located in corridors.

(f) Where practicable, crew spaces shall be located entirely separate and independent of spaces allotted to passengers or licensed officers.

(Sec. 2, 45 Stat. 1493, as amended, sec. 2, 49 Stat. 888, as amended; 46 U.S.C. 85a, 88a)

[CGFR 65-50, 30 FR 16983, Dec. 30, 1965, as amended by CGFR 69-72, 34 FR 17484, Oct. 29, 1969]

§ 92.20-15 Construction.

(a) All crew spaces are to be constructed in a manner suitable to the purpose for which they are intended. The bulkheads separating the crew space from cargo and machinery spaces, lamp and paint rooms, storerooms, drying rooms, washrooms, and toilet spaces shall be made odorproof where deemed necessary by the Commandant.

(b) Toilet spaces, except when provided as private or semiprivate facilities, shall be so built, fitted, and situated, that no odor from them will readily enter other crew spaces.

(c) Where shall or unsheathed weather decks form boundaries of crew spaces, suitable protective coverings shall be applied to prevent formation or accumulation of moisture.

(d) Where crew spaces adjoin or are immediately above spaces such as galleys machinery spaces or casings, donkey boilerrooms, etc., they shall be suitably protected from the heat.

(e) The interior sides and deckheads of crew spaces shall be covered with enamel, paint, or other material light in color.

(f) Crew spaces shall be properly drained where considered necessary.

(g) All washrooms and toilet rooms shall be properly drained and so constructed and arranged that they can be kept in a clean, workable, and sanitary condition. The scuppers shall be located in the lowest part of the space, due consideration being given to the average trim of the vessel.

§ 92.20–20 Sleeping accommodations.

(a) *Arrangements.* (1) Separate sleeping accommodations are to be provided for the deck, engine, and steward groups of the crew.

(2) Each watch of seamen, firemen or similar ratings on duty in watches is to be provided with separate sleeping room or rooms, unless the total space for accommodations makes this impracticable.

(3) Where practicable, each licensed officer shall be provided with a separate stateroom.

(b) *Size.* (1) Sleeping accommodations for the crew shall be divided into rooms, no one of which shall berth more than four persons.

(2) Each room shall be of such size that there are at least 30 square feet of deck area and a volume of at least 210 cubic feet for each person accommodated. The clear headroom shall be not less than 6 feet 3 inches. In measuring sleeping quarters allocated to crews of vessels, any equipment contained therein for the use of the occupants is not to be deducted from the total volume or from the deck area.

(c) *Equipment.* (1) Each person shall have a separate berth and not more than one berth shall be placed above another. The berths shall have a framework of metal or other hard, smooth material not likely to corrode or harbor vermin, and shall be so arranged that they provide ample room for easy occupancy. The overall size of a berth shall not be less than 30 inches wide by 76 inches long, except by special permission of the Commandant. Where berths adjoin, they shall be divided by a partition not less than 18 inches in height. Where two tiers of berths are fitted, the bottom of the lower must not be less than 12 inches above the deck, and the bottom of the upper must not be less than 2 feet 6 inches both from the bottom of the lower and from the deck overhead. The berths shall not be obstructed by pipes, ventilating ducts, or other installations.

(2) A locker of metal or other hard, smooth material shall be provided for each person accommodated in a room. Each locker shall be not less than 300 square inches in cross section area and 60 inches high. It shall be so placed as to be readily accessible. The interior of the locker shall be so arranged as to facilitate the proper stowage of clothes.

§ 92.20–25 Washrooms and toilet rooms.

(a) There shall be provided at least one toilet, one washbasin, and one shower or bathtub for each eight members or portion thereof in the crew to be accommodated. The crew to be accommodated shall include all members who do not occupy rooms to which private or semiprivate facilities are attached.

(b) Under the following conditions, the toilet and washing facilities for the specific groups of the crew indicated shall be located in spaces separate from the facilities for other crew members; and shall be provided for that group in the ratios required by paragraph (a) of this section.

(1) The members of the engine department, where their number, exclusive of licensed officers, and others separately provided for, exceeds eight.

(2) The members of the steward's department, exclusive of those separately provided for, where their number exceeds eight.

(c) The toilet rooms and washrooms shall be located convenient to the sleeping quarters of the crew to which they are allotted but shall not open directly into such quarters except when they are provided as private or semiprivate facilities.

(d) All washbasins, showers, and bathtubs shall be equipped with proper plumbing, including hot and cold running water. Washbasins may

be located in the crew sleeping quarters.

(e) The toilet rooms shall be separate from the washrooms and at least one washbasin shall be fitted in each toilet room, except where private or semi-private facilities are provided and washbasins are installed in the sleeping rooms.

(1) All toilets shall be installed with proper plumbing for flushing. Toilets shall be provided with seats of the open front type. Urinals may be fitted in toilet rooms, if desired, but no reduction in the required number of toilets will be made therefore.

(2) Where more than one toilet is located in a space or compartment, each toilet shall be separated by partitions, which shall be open at the top and bottom for ventilation and cleaning purposes.

[CGFR 65-50, 30 FR 16983, Dec. 30, 1965, as amended by CGD 73-119R, 38 FR 20449, Aug. 1, 1973]

§ 92.20-30 Messrooms.

(a) Messrooms shall be located as near to the galley or suitably equipped serving pantry as is practicable, except where messroom is equipped with a steam table. The messrooms shall be of such size as to seat the number of persons normally scheduled to be eating at one time.

(b) Messrooms shall be properly equipped with tables, seats, and other necessary equipment and shall be so arranged as to permit access to each seat.

§ 92.20-35 Hospital space.

(a) Except as specifically modified by paragraph (f) of this section, each vessel, which in the ordinary course of its trade makes voyages of more than 3 days duration between ports and which carries a crew of 12 or more, shall be provided with a hospital space. This space shall be situated with due regard to the comfort of the sick so that they may receive proper attention in all weathers.

(b) The hospital shall be suitably separated from other spaces and shall be used for the care of the sick and for no other purpose.

(c) The entrance shall be of such width and in such a position as to admit a stretcher case readily. Berths shall be of metal and may be in double tier, provided the upper berth is hinged and arranged to be secured clear of the lower berth when not in use. At least one berth shall be so arranged that it can be made accessible from both sides when necessary.

(d) The hospital shall be fitted with berths in the ratio of one berth to every twelve members of the crew or portion thereof who are not berthed in single occupancy rooms, but the number of berths need not exceed six.

(e) The hospital shall have a toilet, washbasin, and bath tub or shower conveniently situated. Other necessary suitable equipment of such character as clothes locker, table, seat, etc., shall be provided.

(f) On vessels in which the crew is berthed in single occupancy rooms a hospital space will not be required: *Provided,* That one room shall be designated and fitted for use as a treatment and/or isolation room. Such room shall meet the following standards:

(1) The room must be available for immediate medical use;

(2) The room must be accessible to stretcher cases;

(3) The room must have a single berth or examination table so arranged that it can be made accessible from both sides when necessary; and,

(4) A washbasin with hot and cold running water must be installed either in or immediately adjacent to the space and other required sanitary facilities must be conveniently located.

[CGFR 65-50, 30 FR 16983, Dec. 30, 1965, as amended by CGFR 68-32, 33 FR 5718, Apr. 12, 1968]

§ 92.20-40 Other spaces.

(a) Sufficient facilities, depending upon the number of the crew, shall be provided where the crew may wash their own clothes. There shall be at least one tub or sink, fitted with the necessary plumbing, including hot and cold running water.

(b) Clothes drying facilities or space shall be provided for the needs of the crew.

(c) Recreation accommodations shall be provided. Where messrooms are

used for this purpose, they shall be suitably planned.

§ 92.20-45 Lighting.

(a) All crew spaces shall be adequately lighted in accordance with the requirements of Subchapter J (Electrical Engineering) of this chapter.

(b) Berth lights shall be provided for each member of the crew.

§ 92.20-50 Heating.

(a) All crew spaces shall be adequately heated in a manner suitable to the purpose of the space.

(b) The heating system will be considered satisfactory if it is capable of maintaining a minimum temperature of 70° F. under normal operating conditions without undue curtailment of the ventilation.

(c) Radiators and other heating apparatus shall be so placed, and where necessary shielded, as to avoid risk of fire, danger or discomfort to the occupants. Pipes leading to radiators or heating apparatus shall be lagged where those pipes create a hazard to persons occupying the space.

§ 92.20-55 Insect screens.

(a) Except in such areas as are considered to be insect free, provisions shall be made to protect the crew quarters against the admission of insects. This may be accomplished by the fitting of suitable screens to ventilating skylights, air ports, ventilators, and doors to unscreened spaces and the open deck or by other methods. Insect screens are not required in air conditioned crew quarters for windows, air ports, and doors that are normally kept closed.

[CGFR 66-33, 31 FR 15284, Dec. 6, 1966]

§ 92.20-90 Vessels contracted for prior to November 19, 1952.

(a) Vessels of less than 100 gross tons, contracted for prior to November 19, 1952, shall meet the general intent of § 92.20-5 and in addition shall meet the following requirements:

(1) Existing structure, arrangements, materials, and facilities, previously accepted or approved will be considered satisfactory so long as they are maintained in a suitable condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original construction.

(b) Vessels of 100 gross tons and over, contracted for prior to March 4, 1915, shall meet the requirements of this paragraph.

(1) Existing structure, arrangements, materials, and facilities, previously approved will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original construction: *Provided,* That in no case will a greater departure from the standards of §§ 92.20-5 through 92.20-55 be permitted than presently exists.

(c) Vessels of 100 gross tons and over, contracted for on or after March 4, 1915, but prior to January 1, 1941, shall meet the requirements of this paragraph.

(1) Existing structure, arrangements, materials, and facilities, previously approved will be considered satisfactory so long as they are maintained in a suitable condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original construction.

(2) Where reasonable and practicable, a minimum of one toilet, shower, and washbasin shall be provided for each 10 members of the crew or fraction thereof.

(3) Crew spaces shall have a volume of at least 120 cubic feet and a deck area of at least 16 square feet for each person accommodated.

(4) Each crewmember shall have a separate berth, and berths may not be placed more than two high.

(5) Each vessel, which in the ordinary course of its trade makes a voyage of more than three days' duration between ports and which carries a crew of 12 or more persons, shall be provided with a suitable hospital space for the exclusive use of the sick or injured. Berths shall be provided in the ratio of one berth for each twelve members of the crew or fraction thereof, but the number of berths need not exceed six.

(6) The crew spaces shall be securely constructed, properly lighted, heated, drained, ventilated, equipped, located, and arranged, and where practicable, shall be insulated from undue noise and effluvia.

(d) Vessels of 100 gross tons and over, contracted for on or after January 1, 1941, but prior to November 19, 1952, shall meet the requirements of this paragraph.

(1) Existing structure, arrangements, materials, and facilities, previously approved will be considered satisfactory so long as they are maintained in a suitable condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original construction.

(2) Washrooms and toilet rooms:

(i) There shall be a minimum of one toilet, shower, and washbasin for each 8 members of the crew or fraction thereof who are not accommodated in rooms having attached private or semiprivate facilities.

(ii) Separate facilities shall be provided for the engineroom, deck, or stewards department when the number of crew in that department, exclusive of officers, exceeds 8.

(iii) Toilet rooms shall be separate from the wash rooms. At least one washbasin shall be installed in each toilet room.

(iv) Toilets shall be provided with seats of the open front type. Urinals may be fitted in toilet rooms, if desired, but no reduction will be made in the required number of toilets.

(v) Washbasins, showers, and bath tubs if substituted for showers, shall be equipped with proper plumbing including hot and cold running water.

(3) Crew spaces shall have a volume of at least 120 cubic feet and a deck area of at least 16 square feet for each person accommodated.

(4) Each crewmember shall have a separate berth, and berths may not be placed more than two high.

(5) Each vessel, which in the ordinary course of its trade makes a voyage of more than three days duration between ports and which carries a crew of 12 or more persons, shall be provided with a suitable hospital space for the exclusive use of the sick or injured. Berths shall be provided in the ratio of one berth for each 12 members of the crew or fraction thereof, but the number of berths need not exceed six.

(6) The crew spaces shall be securely constructed, properly lighted, heated, drained, ventilated, equipped, located, and arranged, and where practicable, shall be insulated from undue noise and effluvia.

Subpart 92.25—Rails and Guards

§ 92.25-1 Application.

(a) The provisions of this subpart, with the exception of § 92.25-90, shall apply to all vessels contracted for on or after July 1, 1969. Vessels contracted for prior to July 1, 1969, shall meet the requirements of § 92.25-90.

(Sec. 2, 45 Stat. 1493, as amended, sec. 2, 49 Stat. 888, as amended; 46 U.S.C. 85a, 88a)

[CGFR 65-50, 30 FR 16983, Dec. 30, 1965, as amended by CGFR 69-72, 34 FR 17484, Oct. 29, 1969]

§ 92.25-5 Where rails required.

(a) All vessels shall have efficient guard rails or bulwarks on decks and bridges. The height of rails or bulwarks shall be at least 39½ inches from the deck except that where this height would interfere with the normal operation of the vessel, a lesser height may be approved by the Commandant. At exposed peripheries of the freeboard and superstructure decks, the rails shall be in at least three courses, including the top. The opening below the lowest course shall not be more than 9 inches. The courses shall not be more than 15 inches apart. In the case of ships with rounded gunwales the guard rail supports shall be placed on the flat of the deck. On other decks and bridges the rails shall be in at least two courses, including the top, approximately evenly spaced. If it can be shown to the satisfaction of the Officer in Charge, Marine Inspection, that the installation of rails of such height will be unreasonable and impracticable, having regard to the business of the vessel, rails of a lesser height or in some cases grab rails may be accepted

and inboard rails may be eliminated if the deck is not generally accessible.

(b) Where it can be shown to the satisfaction of the Commandant that a vessel is engaged exclusively in voyages of a sheltered nature, the provisions of paragraph (a) of this section may be relaxed.

(Sec. 2, 45 Stat. 1493, as amended, sec. 2, 49 Stat. 888, as amended; 46 U.S.C. 85a, 88a)

[CGFR 69-72, 34 FR 17484, Oct. 29, 1969]

§ 92.25-10 Storm rails.

(a) On vessels in ocean and coastwise service, suitable storm rails shall be installed in all passageways and at the deckhouse sides where persons on board might have normal access. Storm rails shall be installed on both sides of passageways which are 6 feet or more in width.

§ 92.25-15 Guards in dangerous places.

(a) Suitable hand covers, guards, or rails shall be installed in way of all exposed and dangerous places such as gears, machinery, etc.

§ 92.25-90 Vessels contracted for prior to July 1, 1969.

(a) Vessels contracted for prior to July 1, 1969, assigned a deeper load line under Part 42 of Subchapter E (Load Lines) of this chapter shall have efficient guard rails or bulwarks as required by § 92.25-5. Otherwise, existing structure, arrangements, materials, and facilities previously approved will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original construction. However, in no case will greater departure from the standards of §§ 92.25-5 through 92.25-15 be permitted than presently exists.

(Sec. 2, 45 Stat. 1493, as amended, sec. 2, 49 Stat. 888, as amended; 46 U.S.C. 85a, 88a)

[CGFR 69-72, 34 FR 17484, Oct. 29, 1969]

PART 93—STABILITY

Subpart 93.01—Application

Sec.

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93.20-01 Application.
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93.20-10 Document of authorization.
93.20-15 Certificate of loading.
93.20-20 Exemptions for certain voyages.

AUTHORITY: R.S. 4405, as amended, 4462, as amended, sec. 6(b)(1), 80 Stat. 938; 46 U.S.C. 375, 416, 49 U.S.C. 1655(b); 49 CFR 1.46(b) (35 FR 4959). Interpret or apply R.S. 4417, as amended, 4418, as amended, 4426, as amended, 4488, as amended, 4490, as amended, sec. 3, 24 Stat. 129, as amended, 41 Stat. 305, as amended, sec. 2, 45 Stat. 1943, as amended, sec. 2, 49 Stat. 888, as amended, secs. 1, 2, 49 Stat. 1544, 1545, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 391, 392, 404, 481, 482, 483, 363, 85a, 88a, 367, 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 FR 9671, 3 CFR, 1965 Supp, unless otherwise noted.

SOURCE: CGFR 65-50, 30 FR 16988, Dec. 30, 1965, unless otherwise noted.

Subpart 93.01—Application

§ 93.01-1 General.

(a) The provisions of this part shall apply to the following vessels:

(1) All vessels contracted for on or after November 19, 1952, on an international voyage.

(2) Any other vessel whose stability is questioned by the Commandant or the Officer in Charge, Marine Inspection.

Subpart 93.05—Stability Test

§ 93.05-1 When required.

(a) Except as otherwise provided in this section, each vessel to which this part pertains shall be subjected to a stability test conducted under the supervision of the Coast Guard and the results of the test shall be approved before the vessel is placed in service.

(b) The Commandant may allow the stability test of a vessel to be dispensed with provided basic stability data are available from the stability test of a sister vessel and it is shown to the satisfaction of the Commandant that reliable stability information for the exempted vessel can be obtained from such basic data.

(c) The Commandant may also allow the stability test of an individual vessel or class of vessels, especially designed for the carriage of liquid or ore in bulk, to be dispensed with when reference to existing data for similar vessels clearly indicates that due to the vessel's proportions and arrangements more than sufficient metacentric height will be available in all probable loading conditions.

§ 93.05-5 Procedure.

(a) *Stability tests.* Stability tests conducted on or after November 19, 1952, shall meet the requirements of this section.

(b) *Plans required.* (1) The following plans are essential for use in conducting the stability test and determining the results, and if these plans have not been previously submitted, they shall be made available at the time of the test:

Lines plan.
Curves of form, or hydrostatic curves.
General arrangement plan of decks, holds, inner bottoms, etc.
Inboard and outboard profile.
Midship section.
Capacity plan showing capacities and vertical and longitudinal centers of gravity of cargo spaces, tanks, etc.
Tank sounding tables.
Draft mark locations.

(c) *Stability test preparations.* (1) Preparations as noted in this paragraph shall be made to place a vessel in suitable condition for a stability test. The Coast Guard representative supervising the stability test may relax from these standards in a particular instance if, in his opinion, such relaxation is warranted and will not materially affect the reliability of the results of the test.

(2) To obtain dependable stability results, all tanks on the vessels, as far as practicable, shall be either completely empty and dry or fully pressed up and without air pockets. Where this is impracticable, slack tanks may be accepted provided their free surface can be readily and accurately determined for the angles of heel to be obtained during the stability test.

(3) The vessel shall be as nearly complete as practicable when the test is conducted. If additional material or equipment is to be installed after the test, a complete list of such items by weight and location shall be prepared.

(4) All dunnage, tools, and other items extraneous to the completed vessel shall be removed before the test.

(5) The vessel shall be moored in a location reasonably protected from broadside wind, waves, and tide. The depth of water shall be sufficient to provide ample clearance under the vessel against grounding. Mooring lines shall be arranged so that they will not interfere with the free rolling or listing of the vessel.

Subpart 93.07—Stability Standards

AUTHORITY: 46 U.S.C. 375, 391, 416; 49 U.S.C. 1655(b); 49 CFR 1.4(b) and 1.46(b).

SOURCE: CGD 73-120, 38 FR 17004, June 28, 1973, unless otherwise noted.

§ 93.07-1 Application.

(a) The provisions of this Subpart apply as a minimum to all vessels contracted for after July 1, 1973 for an international and coastwise voyage and any other vessel whose stability is being considered by the Officer in Charge, Marine Inspection. Vessels contracted for prior to July 1, 1973 must meet the requirements in § 93.07-90.

§ 93.07-5 General.

All vessels within the purview of this part must be designed so as to be able to provide sufficient stability in an intact condition in all service conditions.

§ 93.07-10 Weather criteria.

The required minimum metacentric height (GM) in feet at any particular draft is obtained from the following formula:

$$GM = PAh/\Delta \tan \theta$$

Where:

$P = 0.005 + [L/14{,}200]^2$ tons/ft^2 for oceans, coastwise service and for the Great Lakes in winter (Oct 1-Apr. 15).

$P = 0.0033 + [L/14{,}200]^2$ tons/ft^2 for partially protected waters such as lakes, bays, sounds and for the Great Lakes in summer (Apr 16-Sept 30).

$P = 0.0025 + [L/14{,}200]^2$ tons/ft^2 for protected waters such as rivers and harbors.

L = Length between perpendiculars in feet.
A = Projected lateral area in square feet of portion of vessel above water line.
h = Vertical distance in feet from center of A to center of underwater lateral area or approximately one-half draft point.
Δ = Displacement in long tons.
θ = Angle of heel to one-half the freeboard to the deck edge or 14 degrees whichever is less. (For vessels having a discontinuous weather deck or abnormal sheer, the angle to one-half the freeboard may be suitably modified.)

§ 93.07-15 Special cases.

(a) The criteria specified in § 93.07-10 are generally limited in application to flush deck mechanically powered vessels of ordinary proportions and form which carry cargo below the main deck. For other vessels, additional calculations showing that the vessel has a safety level equivalent to that achieved by § 93.07-10 must be submitted. The extent of such calculations will be determined by the Commandant.

§ 93.07-90 Existing vessels.

(a) Vessels contracted for prior to July 1, 1973, must meet the requirements specified in this section.

(b) Existing arrangements, materials, and facilities previously approved will be considered satisfactory so long as they meet the minimum requirements of this section and they are maintained in a suitable condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the original standards.

(c) In general, the standards of stability previously attained should be maintained. In this regard, no change or modification may result in a lower level of stability than that which existed before the change or modifications. This is intended to include the normal additions and subtractions which occur over the life of the ship.

Subpart 93.10—Stability Information for Operating Personnel

§ 93.10-1 Information supplied to master.

(a) Based on the results of the stability test, information shall be prepared by the owners, approved by the Commandant, and furnished to the master which sets forth the stability data necessary to permit efficient handling of the vessel. In general, this information shall be such that the master can, for any condition of loading, by rapid and simple process, obtain accurate guidance as to the stability of the vessel and determine the freeboard.

(b) In the case of a vessel which due to its design or type of service, etc., requires special consideration of its stability characteristics, the information shall also include an indication of any operating conditions which must be maintained to assure the safety of the vessel.

(c) Where any alterations are made to a vessel so as to materially affect the stability information supplied to the master, amended stability infor-

mation shall be provided. If necessary the vessel shall have a new stability test.

Subpart 93.13—Ballast

§ 93.13-1 When needed.

(a) In view of the wide range of cargo weight and distribution placed in a cargo vessel, the use of ballast may be necessary in order to provide satisfactory immersion, trim and stability.

§ 93.13-5 Fixed ballast.

(a) When fixed ballast is installed, its amount and location shall be included in the stability information provided the vessel.

(b) Fixed ballast shall not be removed from the vessel or relocated unless first approved by the Commandant, except that such ballast may be temporarily moved for examination or repair of the vessel and then only under the supervision of a marine inspector.

§ 93.13-10 Liquid ballast.

(a) Liquid ballast may be used when necessary to provide satisfactory draft, trim, weight distribution, or stability.

(b) The liquid ballast used in an oil tank must be discharged in accordance with—

(1) Section 311 of the Federal Water Pollution Control Act, as amended (86 Stat. 816; 33 U.S.C. 1321);

(2) Section 12 of the Oil Pollution Act, 1961, as amended (75 Stat. 404; 33 U.S.C. 1011); and

(3) 33 CFR parts 151, 155, and 156.

(Sec. 8, 75 Stat. 404; 33 U.S.C. 1007)

[CGFR 65-50, 30 FR 16988, Dec. 30, 1965, as amended by CGD 73-58R, 39 FR 18767, May 30, 1974]

Subpart 93.15—Stability Letter

§ 93.15-1 Posting.

(a) Each vessel subject to the requirements of this part shall have posted under glass in the pilothouse a stability letter issued by the Coast Guard before the vessel is placed in service.

§ 93.15-5 Information contained in stability letter.

(a) Stability letters issued to vessels subject to the provisions of § 93.05-1(a) or (b) will record approval of the information required by Subpart 93.10 and will set forth the master's responsibility for maintaining satisfactory stability conditions at all times.

(b) Stability letters issued to vessels which are exempted from a stability test in accordance with § 93.05-1(c), will record this fact.

Subpart 93.20—Bulk Grain Cargoes

AUTHORITY: International Convention for the Safety of Life at Sea 960 and E.O. 11382, November 23, 1967.

SOURCES: CGD 74-182, 40 FR 36343, Aug. 20, 1975, unless otherwise noted.

§ 93.20-01 Application.

The provisions of this subpart apply to all vessels that load grain in bulk after September 19, 1975 except:

(a) U.S. tank vessels which meet the requirements of 46 CFR 31.10-33.

(b) Vessels engaged on voyages solely between ports within the limits of the Great Lakes and the St. Lawrence River as far east as a straight line drawn from Cap de Rosiers to West Point, Anticosti Island, and east of line along the 63rd meridian from Anticosti Island to the north shore of St. Lawrence River.

§ 93.20-05 General.

(a) Each cargo vessel or barge that carries grain in bulk must comply with the Annex to Inter-Governmental Maritime Consultative Organization (IMCO) Resolution A.264(VIII). As used in Resolution A.264(VIII), the term "Administration" means "U.S. Coast Guard." Copies of Resolution A.264 (VIII) may be obtained from the National Cargo Bureau, Inc., One World Trade Center, Suite 2757, New York, N.Y. 10048; the Commandant (G-M/82), U.S. Coast Guard, 400 Seventh Street, SW., Washington, D.C. 20590; or the office of any Coast Guard District Commander or Officer in Charge, Marine Inspection. The provisions of IMCO Resolution A.264(VIII) are published separately

in U.S. Coast Guard Navigation and Inspection Circular No. 3-75 dated August 20, 1975.

(b) Notwithstanding the provisions of 46 CFR 56.50-50, bilges must be properly prepared and sounding pipes in place, clear and operable. If bilges are not present, suctions must be boxed.

(c) When calculating the minimum required metacentric height (GM), a free surface allowance must be made for slack liquids. The free surface allowance used must be equal to or greater than the free surface allowance for the following combination of tanks:

(1) The maximum free surface for the pair of tanks, port and starboard, of each type of consumable liquid, having the largest free surface.

(2) The maximum free surface of the fuel oil settlers.

(3) The free surface at 5 degrees heel for all fuel tanks assumed 98% full except for the pair considered in paragraph (c)(1), of this section.

§ 93.20-10 Document of authorization.

(a) Before it can load grain, each vessel that carries grain in bulk must have a document of authorization issued in accordance with one of the following:

(1) If the document of authorization is issued on or after September 19, 1975, Regulation 10, Part A of the Annex to IMCO Resolution A.264(VIII).

(2) If the document of authorization is issued before September 19, 1975, 46 CFR 144.20-32 or Navigation and Vessel Inspection Circular No. 10-69 dated November 20, 1969.

(b) The Commandant recognizes the National Cargo Bureau, Inc., One World Trade Center, Suite 2757, New York, N.Y. 10048, for the purpose of issuing documents of authorization in accordance with paragraph (a)(1) of this section.

§ 93.20-15 Certificate of loading.

(a) Before it can sail, each vessel that carries grain in bulk must have a certificate of loading issued by an organization recognized by the Commandant for that purpose. The certificate of loading may be accepted as prima facie evidence of compliance with these regulations.

(b) The Commandant recognizes the National Cargo Bureau, Inc., One World Trade Center, Suite 2757, New York, N.Y. 10048, for the purpose of issuing certificates of loading.

§ 93.20-20 Exemptions for certain voyages.

(a) Vessels on a voyage that is within the inland waters of the United States are exempt from the regulations in this subpart.

(b) Vessels on a voyage between (1) United States ports along the East Coast as far south as Cape Henry;

(2) Wilmington, N.C. and Miami, Fla.;

(3) United States ports in the Gulf of Mexico;

(4) Puget Sound ports and Canadian West Coast ports or Columbia River ports, or both;

(5) San Francisco, Los Angeles, and San Diego; or

(6) Great Lakes ports and St. Lawrence River ports as far east as a straight line drawn from Cape de Rosiers to West Point, Anticosti Island, and east of a line drawn along the 63rd meridian from Anticosti Island to the north shore of the St. Lawrence River; are exempt from 46 CFR 93.20-05(a) if—

(i) The master is satisfied that the longitudinal strength of his vessel is not impaired;

(ii) The master ascertains the weather to be encountered on the voyage;

(iii) Potential heeling moments are reduced to a minimum value by carrying as few slack holds as possible;

(iv) Slack surfaces are leveled; and

(v) The metacentric height (GM) in feet on the vessel throughout the voyage after correction for liquid free surface, is in excess of the required metacentric height (GM), in feet as obtained from Table 93.17-15(b).

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TABLE 93.17-15—*Calculation of GM*

GM = L × tabular value

[Tabular value: If the ratio of available freeboard to beam is more than 0.268 the required GM in order to shift the vessel shall be calculated by multiplying the applicable figure below by the total length of slack surface. If the ratio found above is less than 0.268 the tabular values shall be adjusted by multiplying by 0.268 and dividing by the actual ratio found]

Displacement of vessel (in 1,000 long tons)	Breadth (feet)												
	40	45	50	55	60	65	70	75	80	85	90	95	100
10	0.0094	0.0134	0.0184	0.0244	0.0317	0.0403	0.0504	0.0619	0.0752	0.0902	0.1070	0.129	0.1468
20	.0047	.0067	.0092	.0122	.0159	.0202	.0252	.0310	.0376	.0451	.0535	.062	.0739
30	.0031	.0045	.0061	.0081	.0106	.0134	.0168	.0206	.0251	.0301	.0357	.042	.0489
40	.0023	.0033	.0046	.0061	.0079	.0101	.0126	.0155	.0188	.0225	.0268	.031	.0367
50	.0019	.0027	.0038	.0049	.0063	.0081	.0101	.0124	.0150	.0180	.0214	.025	.0294
60	.0016	.0022	.0031	.0041	.0053	.0067	.0084	.0103	.0125	.0150	.0178	.021	.0245
70	.0013	.0019	.0026	.0035	.0045	.0058	.0072	.0088	.0107	.0129	.0153	.010	.0210
80	.0012	.0017	.0023	.0031	.0040	.0050	.0063	.0077	.0094	.0113	.0134	.015	.0184
90	.0010	.0015	.0020	.0027	.0035	.0045	.0056	.0069	.0084	.0100	.0119	.014	.0163
100	.0009	.0013	.0018	.0024	.0032	.0040	.0050	.0062	.0075	.0090	.0107	.012	.0147

where:

L = Total length of slack surfaces
B = Maximum breadth of slack surfaces
Δ = Displacement of vessel in 1,000 long tons

NOTES: In those portions of length which are divided by a centerline bulkhead ¼ of the tabular value may be used. The table is calculated for wheat. If necessary the GM may be adjusted for other grains by multiplying by the following factors.

Stowage Factor approximately 50 corn, rye, soybeans	0.9
Stowage Factor approximately 56 barley	.8
Stowage Factor approximately 70 oats	.6

[CGD 74-182, 40 FR 36343, Aug. 20, 1975; 40 FR 42195, Sept. 11, 1975]

PART 94—LIFESAVING EQUIPMENT

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AUTHORITY: R.S. 4405, as amended, 4462, as amended, sec. 6(b)(1), 80 Stat. 938; 46 U.S.C. 375, 416, 49 U.S.C. 1655(b); 49 CFR 1.46(b) (35 FR 4959). Interpret or apply R.S.

4417, as amended, 4418, as amended, 4426, as amended, 4488, as amended, 4491, as amended, sec. 10, 35 Stat. 428, as amended, 41 Stat. 305, as amended, secs. 1, 2, 49 Stat. 1544, 1545, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 391, 392, 404, 481, 489, 395, 363, 367, 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 FR 9671, 3 CFR, 1965, Supp., unless otherwise noted.

SOURCE: CGFR 65-50, 30 FR 16989, Dec. 30, 1965, unless otherwise noted.

Subpart 94.01—Application

§ 94.01-1 Details of application.

(a) Except as specifically noted, the provisions of this part shall apply to all vessels other than motorboats. Motorboats shall meet the requirements of Subparts 94.01, 94.05, and 94.40, and § 94.10-1(c).

Subpart 94.05—General Provisions Pertaining to Lifesaving Equipment

§ 94.05-1 Equipment of an approved type.

(a) Where equipment in this part is required to be of an approved type such equipment requires the specific approval of the Commandant. Such approvals are published in the FEDERAL REGISTER and in addition, are contained in Coast Guard publication CG-190, "Equipment Lists."

(b) Specifications for many of the items required to be of an approved type have been promulgated and are contained in Subchapter Q (Specifications) of this chapter. In general, such specifications are of interest only to the manufacturer of specific items of equipment.

§ 94.05-5 Equipment installed but not required.

(a) Where items of lifesaving equipment are not required, but are installed, such equipment and its installation shall meet the requirements of this part.

§ 94.05-10 Primary lifesaving equipment.

(a) The term "primary lifesaving equipment" means a lifeboat or an acceptable substitute. Life preservers and ring life buoys are not included in this definition of "primary lifesaving equipment."

Subpart 94.10—Lifeboats, Liferafts, Lifefloats, Buoyant Apparatus, and Rescue Boats

§ 94.10-1 Application.

(a) Except as otherwise provided in this section, the provisions of this subpart shall apply to all vessels other than motorboats, contracted for on or after May 26, 1965.

(b) Vessels other than motorboats, contracted for prior to May 26, 1965, shall meet the requirements of § 94.10-90.

(c) Inspected motorboats carrying freight for hire shall be provided with such number and size of approved liferafts, lifefloats, or buoyant apparatus as deemed necessary by the Officer in Charge, Marine Inspection. Workboats or skiffs may be permitted by the Officer in Charge, Marine Inspection, if considered suitable.

(d) In the case of special types of vessels subject to the International Convention for Safety of Life at Sea, 1960, which are not specifically treated in this subpart, such as whale factory ships, fish processing and canning ships, etc., the Commandant may give special consideration as to lifesaving equipment requirements to the extent permitted by the International Convention for Safety of Life at Sea, 1960.

§ 94.10-5 Type of lifeboats, liferafts, lifefloats, buoyant apparatus, and rescue boats required.

(a) *Lifeboats.* (1) All lifeboats shall be of an approved type, constructed in accordance with Subpart 160.035 of Subchapter Q (Specifications) of this chapter except as specifically noted in this part.

(2) All lifeboats certified to carry 60 or more but not over 100 persons shall be either motor lifeboats or shall be fitted with an approved type of hand-propelling gear. Lifeboats carrying more than 100 persons shall be motor lifeboats.

(3) A Class 1 motor lifeboat is one that is fitted with a compression-ignition engine, is capable of being readily started in all conditions, and has sufficient fuel for 24 hours continuous operation. The speed ahead in smooth water when loaded with its full com-

plement of persons and equipment shall be at least 6 knots.

(4) Except as further modified in this paragraph, all lifeboats, except those installed on vessels in river service, shall be fitted with suitable disengaging apparatus consisting of fixed hooks in the lifeboat or mechanical disengaging apparatus. Mechanical disengaging apparatus, if fitted shall be of an approved type, constructed in accordance with Subpart 160.033 of Subchapter Q (Specifications) of this chapter.

(i) All lifeboats installed on ocean, coastwise, or Great Lakes vessels of over 3,000 gross tons shall be fitted with mechanical disengaging apparatus so arranged as to make it possible for the lifeboats to be launched with their full complement of persons and equipment while such vessels are underway or stopped, and for both ends of the lifeboat to be released simultaneously, under tension or not, by one person. Simultaneous release shall be effected by partially rotating a shaft which shall be continuous and extend from points of contact with the hooks.

(ii) All lifeboats installed on any particular vessel shall be fitted with the same type of disengaging apparatus.

(iii) On small vessels, the Commandant may approve means other than those previously mentioned to agree with the needs of a particular vessel.

(b) *Liferafts.* (1) All rigid type liferafts shall be of an approved type, constructed in accordance with Subpart 160.018 of Subchapter Q (Specifications) of this chapter. Type A liferafts shall be stowed on the standard liferaft skids required by § 94.15-10(c)(1) unless specifically noted otherwise. Rigid type liferafts shall not be used as required equipment on vessels on an international voyage.

(2) An inflatable liferaft must meet the following:

(i) The liferaft must be approved under Subpart 160.051 of this chapter.

(ii) Except as required in paragraph (b)(2)(iii) of this section, the liferaft must be marked in accordance with § 160.051-8 of this chapter.

(iii) After January 1, 1976 on vessels certificated for Great Lakes service and after January 1, 1980 on other certificated vessels, the liferaft must show on or near the liferaft's nameplate, and the liferaft's container must show on or near the plate, marking approved by a Coast Guard inspector that is—

(A) An approval number consisting of "160.051/" followed by a number that is greater than 49 followed by a revision number (e.g. 160.051/50/1); or

(B) An approval number consisting of "160.051/" followed by a number that is smaller than 50 that is followed by a revision number (e.g. 160.051/48/1), the words "MOD. TEMP.", a Coast Guard inspector's initials, and the date that an inspector found that the liferaft met § 160.051-5(c)(4) of this chapter.

(3) On vessels on an international voyage, each inflatable liferaft shall have a carrying capacity of not less than 6 nor more than 25 persons.

(c) *Lifefloats.* (1) All lifefloats shall be of an approved type, constructed in accordance with Subpart 160.027 of Subchapter Q (Specifications) of this chapter.

(d) *Buoyant apparatus.* (1) All buoyant apparatus shall be of an approved type, constructed in accordance with Subpart 160.010 of Subchapter Q (Specifications) of this chapter.

(e) *Rescue boat.* (1) In general, a suitable rescue boat shall be a small lightweight boat of rigid construction, with built-in buoyancy and capable of being readily launched and easily maneuvered. Also it shall be of adequate proportion to permit taking an unconscious person on board without capsizing. A rescue boat and its installation shall be acceptable to the Officer in Charge, Marine Inspection, as suitable for the rescue of persons accidentally falling over the side, or for similar emergency purposes. The size, shape, installation, and other factors of suitability will be determined with due consideration of the size, arrangement, intended service, and crew requirements of the vessel on which it is to be installed.

(2) For protected waters, a rescue boat constructed in accordance with Subpart 160.056 of Subchapter Q (Specifications) of this chapter is acceptable in meeting the intent of this paragraph. For exposed waters, a more seaworthy rescue boat may be re-

quired, but in no case shall more than one approved lifeboat suitable for rescue work be required.

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGFR 68-65, 33 FR 19986, Dec. 28, 1968; CGD 75-040, 40 FR 58454, Dec. 17, 1975]

§ 94.10-10 Requirements for vessels in ocean or coastwise service other than barges; towing, fishing, and wrecking vessels; pilot boats; and yachts.

(a) All vessels 500 gross tons and over shall be provided with sufficient lifeboats on each side to accommodate all persons on board.

(b) All vessels of less than 500 gross tons shall be provided with sufficient lifeboats to accommodate all persons on board.

(c) Lifeboats shall be not less than 24 feet in length, except where owing to the size of the vessel, or for other reasons, the Commandant considers the carriage of such lifeboats to be unreasonable or impracticable. However, in no case shall lifeboats of less than 16 feet in length be used.

(d) All vessels of 1,600 gross tons and over on an international voyage shall carry at least one motor-propelled lifeboat of Class 1.

(e) In addition to the lifeboats required by paragraph (a) of this section, each vessel on an international voyage and each vessel in ocean or coastwise service must carry liferafts of sufficient aggregate capacity to accommodate at least 50 percent of the persons on board. Those vessels that have widely separated accommodation or working spaces must have at least one liferaft in each such location.

(f) Inflatable liferafts may be substituted for lifeboats on certain vessels not on an international voyage in accordance with § 94.10-55.

(46 U.S.C. 391a, 481; 49 U.S.C. 1655(b); 49 CFR 1.46(b) and (n)(4))

[CGFR 68-65, 33 FR 19986, Dec. 28, 1968, as amended by CGD 79-072, 46 FR 28168, May 26, 1981]

§ 94.10-15 Requirements for seagoing barges in ocean or coastwise service.

(a) All manned seagoing barges of 100 gross tons and over shall be provided with a lifeboat of sufficient capacity for all persons on board. All lifeboats shall have a capacity of at least 80 cubic feet.

(b) Inflatable liferafts may be substituted for lifeboats on certain vessels in accordance with § 94.10-55.

(c) All manned seagoing barges of 100 gross tons and over in ocean or coastwise service, having widely separated accommodation or working spaces, must have at least one liferaft, of sufficient aggregate capacity to accommodate at least 50 percent of the persons on board, in each such location.

(46 U.S.C. 391a, 481; 49 U.S.C. 1655(b); 49 CFR 1.46(b) and (n)(4))

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGD 79-072, 46 FR 28168, May 26, 1981]

§ 94.10-20 Requirements for towing, fishing, and wrecking vessels, and pilot boats in ocean or coastwise service.

(a) All vessels of 500 gross tons and over on an international voyage, other than fishing vessels, shall meet the applicable requirements of § 94.10-10 in lieu of the requirements of this section.

(b) All vessels shall carry sufficient lifeboats or flotation equipment for all persons on board. In lieu of the standard lifeboats required by § 94.10-5(a), the following types of boats or flotation equipment may be used by the vessels specified:

(1) Vessels engaged exclusively in the business of purse seining may use their seine boats.

(2) Vessels engaged exclusively in the business of hook and line fishing from dories may use their dories provided they are fitted with air tanks of sufficient capacity to meet the requirements of Subpart 160.035 of Subchapter Q (Specifications) of this chapter for lifeboats.

(3) Vessels engaged exclusively in the business of wrecking may use their surf boats.

(4) Vessels engaged exclusively in the business of furnishing pilots to vessels may use their launches and/or yawls.

(5) Vessels not exceeding 150 feet in length which are under 300 gross tons engaged exclusively in the business of transporting supplies, equipment, and cargo to or from operational sites of

exploration, development, removal and storage of resources or related activities thereof on the continental shelf of the United States in the Gulf of Mexico, in the Atlantic Ocean south of the thirty-third parallel north latitude and in the Pacific Ocean may use lifefloats in lieu of lifeboats if a suitable rescue boat is carried and is adequately installed. Vessels in this category may carry persons in addition to the crew up to the number specified in the certificate of inspection, but not to exceed 16, and such persons may be only industry personnel engaged exclusively in the exploration, development, removal and storage of resources, or related activities thereof, who are required by the nature of their work to ride such vessels.

(c) All lifeboats shall have a capacity of at least 180 cubic feet. However, the Coast Guard District Commander may, in exceptional cases, permit smaller lifeboats where the crew is insufficient to handle the larger lifeboat or where there is lack of space to carry such larger lifeboat. In no case may lifeboats be used having a capacity of less than 125 cubic feet.

(d) Inflatable liferafts may be substituted for lifeboats, liferafts, lifefloats and buoyant apparatus on certain vessels in accordance with § 94.10-55.

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGFR 68-65, 33 FR 19986, Dec. 28, 1968]

§ 94.10-25 Requirements for yachts in ocean or coastwise service.

(a) All yachts in ocean service shall have an aggregate lifeboat and liferaft capacity for all persons on board. Not less than 75 percent of the required capacity shall be in lifeboats and the remainder may be in Type A or Type B liferafts.

(b) All yachts in coastwise service shall have an aggregate lifeboat and liferaft capacity as required in paragraph (a) of this section, except that during the interval between May 15 and October 15, in any one year, both dates inclusive, they shall only be required to be equipped with lifeboat and liferaft capacity to accommodate 70 percent of all persons on board, not less than 50 percent of the required capacity shall be in lifeboats and the remainder may be in Type A or Type B liferafts.

(c) All lifeboats shall have a capacity of at least 125 cubic feet. However, the Coast Guard District Commander may, if he deems it proper, modify the requirements as to the size of lifeboats.

(d) Yachts may use their launches in lieu of the standard lifeboats required by § 94.10-5(a), provided the launches are equipped with air tanks of sufficient capacity to meet the requirements of Subpart 160.035 of Subchapter Q (Specifications) of this chapter for lifeboats. Such launches shall be fitted with suitable nameboards or the name of the vessel shall be painted on the bow or stern.

(e) Inflatable liferafts may be substituted for lifeboats and liferafts on certain vessels in accordance with § 94.10-55.

§ 94.10-40 Requirements for vessels in Great Lakes; lakes, bays, and sounds; or river service other than fireboats, wrecking and fishing vessels, pilot boats, and yachts.

(a) All vessels, except those on an international voyage, shall be provided with lifeboats and liferafts as required by Table 94.10-40(a).

TABLE 94.10-40(a)—LIFEBOATS AND LIFERAFTS REQUIRED ON VESSELS IN GREAT LAKES; LAKES, BAYS, AND SOUNDS, AND RIVER SERVICE OTHER THAN FIREBOATS, WRECKING AND FISHING VESSELS, PILOT BOATS, AND YACHTS

	Great Lakes			Lakes, bays and sounds		Rivers	
	Vessels carrying cargo and other vessels of 300 gross tons and over	Other vessels		50 gross tons and over	Under 50 gross tons	50 gross tons and over	Under 50 gross tons
		50 gross tons and over, but less than 300 gross tons	Under 50 gross tons				
Percentage of persons to be accommodated.	200	100	100	100	100	At least one suitable boat with lines attached and supplied with oars.[1]	Only lifeboats or liferafts as in the judgment of Officer in Charge, Marine Inspection, are necessary.[1]
Percentage of required equipment in lifeboats.	[1] 100	[2] 50	Either lifeboats or liferafts.[1]	[1 2] 50	Either lifeboats or liferafts.[1]	do	Do.
Percentage of required equipment which may be in Type A or Type B liferafts.	None	None	do	50 in either Type A, B, or inflatable liferafts.	do	None	None.
Percentage of required equipment in inflatable liferafts.	[3] 100	50	do	do	do	do	Do.

[1] Vessels navigating waters where the average depth of the channel does not exceed 3 feet shall not be required to be equipped with boats.

[2] Harbor towing vessels of less than 150 gross tons may substitute one or more liferafts of Type A or Type B for the lifeboats required if the lifeboats interfere with the practical operation of the vessel and the substitution may be made with safety in the opinion of the Officer in Charge, Marine Inspection.

[3] Every vessel of 300 gross tons and over, having widely separated accommodations or working spaces, must have at least one liferaft, of sufficient aggregate capacity to accommodate at least 50 percent of the persons on board, in each such location.

(b) Inflatable liferafts may be substituted for lifeboats and liferafts on certain vessels in accordance with § 94.10-55.

(c) All vessels on an international voyage shall meet the applicable requirements of § 94.10-10.

(46 U.S.C. 391a, 481; 49 U.S.C. 1655(b); 49 CFR 1.46(b) and (n)(4)).

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGFR 68-18, 33 FR 2847, Feb. 10, 1968; CGD 79-072, 46 FR 28169, May 26, 1981]

§ 94.10-45 Requirements for fireboats, wrecking and fishing vessels, and pilot boats in Great Lakes; lakes, bays, and sounds; or river service.

(a) All vessels of 50 gross tons and over shall have an aggregate lifeboat and liferaft capacity to accommodate all persons on board. Not less than 50 percent of such capacity shall be in lifeboats and the remainder may be in Type A or Type B liferafts.

(b) All vessels of less than 50 gross tons shall have an aggregate lifeboat and liferaft capacity to accommodate all persons on board. The liferafts may be either Type A or Type B.

(c) In lieu of the standard lifeboats required by § 94.10-5(a) the following types of boats may be used:

(1) Vessels used exclusively as fireboats and connected to or belonging to a regularly organized fire department shall be required to carry only such boats or rafts as in the judgment of the Officer in Charge, Marine Inspection, may be required to carry the crew.

(2) Vessels engaged exclusively in the business of furnishing pilots to vessels may use their launches and/or yawls.

(3) Vessels engaged exclusively in the business of wrecking may use their surf boats.

(4) Vessels engaged exclusively in the business of seine fishing may use their seine boats.

(d) Inflatable liferafts may be substituted for lifeboats and liferafts on certain vessels in accordance with § 94.10-55.

§ 94.10-50 Requirements for yachts in Great Lakes; lakes, bays, and sounds; or river service.

(a) All yachts shall be fitted with lifeboats and liferafts as required by Table 94.10-40(a), depending upon the service. Alternatively, such equipment may be provided as required by Table 75.10-20(a) of Subchapter H (Passenger Vessels) of this chapter.

(b) Inflatable liferafts may be substituted for lifeboats and liferafts on certain vessels in accordance with § 94.10-55.

§ 94.10-55 Inflatable liferafts as an alternate for lifeboats, other liferafts, lifefloats, and buoyant apparatus on certain vessels not on an international voyage.

(a) (1) On all vessels inflatable liferafts may be permitted as substitutes for other types of liferafts, lifefloats, and buoyant apparatus wherever they may be required.

(2) The capacity of inflatable liferafts carried in place of other liferafts, lifefloats, and buoyant apparatus shall be at least equivalent to that required of the equipment for which substitution is made. This requirement is in addition to the inflatable liferafts required by § 94.10-10(e).

(3) The substitution of inflatable liferafts shall not be made without prior approval of the Officer in Charge, Marine Inspection.

(b) On all vessels less than 3,000 gross tons the substitution of liferafts for lifeboats may be permitted as follows:

(1) (i) On all vessels under 500 gross tons, inflatable liferafts may be substituted for all required lifeboats.

(ii) The total capacity of the inflatable liferafts shall be at least equal to the total number of persons that the lifeboats would have been required to accommodate. In the case of total substitution of inflatable liferafts, at least two inflatable liferafts shall be carried. Partial substitution is permissible provided the aggregate lifeboat and inflatable liferaft capacity is sufficient to accommodate the required number of persons.

(iii) Where substitution of inflatable liferafts is made, a suitable rescue boat shall be provided. In the case of partial substitution, a lifeboat may serve as the rescue boat.

(iv) In the exceptional case on a vessel under 100 gross tons, the rescue boat may be omitted when it can be shown to the satisfaction of the Commandant that it is not necessary due to the size, arrangement and maneuverability of the vessel, and its intended service.

(2) (i) On all vessels of 500 gross tons and upward to 1,600 gross tons, inflatable liferafts may be substituted for all required lifeboats provided one approved lifeboat of a size acceptable to the Officer in Charge, Marine Inspection, suitable for rescue purposes, is installed.

(ii) The aggregate lifeboat and inflatable liferaft capacity shall be at least equal to the total number of persons that the lifeboats would have been required to accommodate.

(iii) The launching arrangement and location of the lifeboat to be used as rescue boat shall be such that it can be readily launched and shall be to the satisfaction of the Officer in Charge, Marine Inspection.

(3) (i) On all vessels of 1,600 gross tons and upward to 3,000 gross tons, inflatable liferafts may be substituted for all except two of the required lifeboats. These lifeboats shall be of a size acceptable to the Officer in Charge, Marine Inspection, and shall be suitable for rescue purposes. In all cases, two approved lifeboats, one on each side, shall be provided.

(ii) The aggregate lifeboat and inflatable liferaft capacity shall be at least equal to the total number of persons that the lifeboats, for which substitutions are made plus those remain-

ing on board, would have been required to accommodate.

(4) The substitution of inflatable liferafts for lifeboats shall not be made without prior approval of the Officer in Charge, Marine Inspection.

(c) On all seagoing barges of 100 gross tons and over an inflatable liferaft may be substituted for the required lifeboat, the total capacity of which shall be sufficient to accommodate all persons on board.

(1) On seagoing barges employed as drilling tenders in the offshore oil exploration industry where substitution of inflatable liferafts is made, a suitable rescue boat shall be provided. In the case of partial substitution, a lifeboat may serve as the rescue boat.

(d) The Commandant may give special consideration to the substitution of approved inflatable liferafts for required lifeboats on vessels of 3,000 gross tons and over.

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGFR 68-65, 33 FR 19986, Dec. 28, 1968]

§ 94.10-90 Vessels contracted for prior to May 26, 1965.

(a) Vessels contracted for prior to May 26, 1965, shall meet the following requirements:

(1) Except as specifically modified by this paragraph, the requirements of §§ 94.10-5 through 94.10-55 shall be complied with insofar as the number and general type of lifesaving equipment is concerned. Existing items of lifesaving equipment previously approved, but not meeting the applicable specifications or requirements set forth in §§ 94.10-5 through 94.10-55 may be continued in service so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs, alterations, and replacements may be permitted to the same standards as the original installation. However, all new installations or major replacements shall meet the applicable specifications or requirements.

(2) On vessels of over 3,000 gross tons certificated for ocean, coastwise, or Great Lakes service, all replacement of disengaging apparatus shall meet the requirements of § 94.10-5(a)(4)(i). On all other vessels certificated for any service, all of the lifeboats on a particular vessel shall be fitted with the same type of disengaging apparatus.

(3) The requirements of § 94.10-10(c) shall not apply except for replacements, and then only if it can be done without change to existing davits and arrangements.

Subpart 94.15—Stowage and Marking of Lifeboats, Liferafts, Lifefloats, and Buoyant Apparatus

§ 94.15-1 Application.

(a) The provisions of this subpart, with the exception of § 94.15-90, shall apply to all vessels contracted for on or after May 26, 1965. Vessels contracted for prior to May 26, 1965, shall meet the requirements of § 94.15-90.

§ 94.15-5 General.

(a) The lifeboats, liferafts, lifefloats, and buoyant apparatus shall be readily available in the case of emergency, and shall be kept in good working order and available for immediate use at all times when the vessel is being navigated and, insofar as reasonable and practicable, while the vessel is not being navigated.

(b) The decks on which lifeboats, liferafts, lifefloats, and buoyant apparatus are carried shall be kept clear of freight or any other obstructions which would interfere with the immediate launching of the lifesaving appliances.

§ 94.15-10 Stowage.

(a) *General.* Lifeboats, liferafts, lifefloats, and buoyant apparatus shall be stowed in such a manner that:

(1) They are capable of being launched in the shortest possible time.

(2) They shall not impede the launching or handling of other lifesaving appliances.

(3) They shall not impede the marshalling of persons at the embarkation stations, or their embarkation.

(4) They shall be capable of being put in the water safely and rapidly even under unfavorable conditions of list and trim.

(b) *Lifeboat stowage.* (1) Every lifeboat shall be attached to a separate set of davits.

(2) Suitable access to the lifeboats shall be provided to enable the crew to prepare the lifeboats for launching.

(3) Lifeboats shall be so stowed that embarkation into them may be made rapidly and in good order.

(4) Lifeboats shall not be stowed in the bows of the vessel nor as far aft as to be endangered by the propellers or overhang of the stern.

(5) Lifeboats shall be so stowed that it shall not be necessary to lift them in order to swing out the davits, except on small vessels where such requirement is unreasonable and impracticable in the opinion of the Officer in Charge, Marine Inspection.

(6) Means shall be provided for bringing the lifeboats against the ship's side and holding them there so that persons may be safely embarked.

(7) On vessels certificated for ocean or coastwise service, lifeboats shall be fitted with skates or other suitable means to facilitate launching against an adverse list of up to 15 degrees. However, skates may be dispensed with if, in the opinion of the Commandant, the arrangements are such as to insure that the lifeboats can be satisfactorily launched without such skates.

(8) On vessels in ocean and coastwise service, where applicable, means shall be provided outside the machinery space to prevent the discharge of water into the lifeboats while they are being lowered. This shall consist of baffles to deflect the water down the vessel's side, or reach rods, or other means to close the discharge openings.

(c) *Liferaft stowage.* (1) Type A liferafts shall be stowed on standard skids constructed in accordance with Subpart 160.042 of Subchapter Q (Specifications) of this chapter.

(2) Type B liferafts shall be stowed in such a manner that they may be readily launched.

(3) The additional liferaft required on Great Lakes vessels by Table 94.10-40(a) shall be stowed in such a manner that it will float clear in the event of sinking of the vessel. The requirements of paragraphs (c) (1) and (2) of this section need not be complied with for such liferaft.

(4) Inflatable liferafts shall be stowed in such a manner that they will float free in the event of the vessel sinking. Stowage and launching arrangements will be to the satisfaction of the Officer in Charge, Marine Inspection.

(d) *Lifeboat and buoyant apparatus towage.* (1) Lifeboats and buoyant apparatus shall be stowed in such a manner as to be readily launched. Lifefloats exceeding 400 pounds in weight shall be stowed in such a manner as not to require lifting before launching.

(2) Lifefloats and buoyant apparatus shall not be secured to the vessel except by lashings which can be easily slipped. They may be stowed in tiers one above the other, but not more than four high. When stowed in tiers, the separate units shall be kept apart by suitable distance pieces.

(3) Means shall be provided to prevent shifting.

(e) *Hydraulic releases.* (1) Hydraulic releases approved under Subpart 160.062 of Subchapter Q (Specifications) of this chapter, and spring-tensioned gripes may be permitted in the installation of any liferaft, inflatable liferaft, lifefloat, or buoyant apparatus. On and after July 1, 1969, only hydraulic releases approved under Subpart 160.062 of this chapter may be used.

(2) Existing hydraulic releases may be returned to their manufacturers or to repair facilities designated by their manufacturers for the purpose of determining compliance with Subpart 160.062 of this chapter. If such a release passes the periodic servicing and testing requirements in § 160.062-4(f) of this chapter and the reconditioning work (if any) is done to the satisfaction of the Officer in Charge, Marine Inspection, the complete body marking and inspection tagging required by § 160.062-5 of this chapter shall be placed on such a release indicating it is an approved item.

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGFR 68-32, 33 FR 5719, Apr. 12, 1968]

§ 94.15-15 Marking.

(a) Lifeboats, liferafts, lifefloats, and buoyant apparatus shall be marked as required by §§ 97.37-37 and 97.37-40 of this subchapter.

§ 94.15-90 Vessels contracted for prior to May 26, 1965.

(a) Vessels contracted for prior to May 26, 1965, shall meet the following requirements:

(1) The provisions of §§ 94.15-5 through 94.15-15 shall be met except as further set forth in this paragraph.

(2) The requirements of § 94.15-10(b)(7) shall apply unless in the opinion of the Officer in Charge, Marine Inspection, it is unreasonable or impracticable, or the arrangement or construction of the vessel make the use of skates or similar appliances unnecessary.

Subpart 94.20—Equipment for Lifeboats, Liferafts, Lifefloats, and Buoyant Apparatus

§ 94.20-1 Application.

(a) The provisions of this subpart, with the exception of § 94.20-90, shall apply to all vessels contracted for on or after May 26, 1965. Vessels contracted for prior to May 26, 1965, shall meet the requirements of § 94.20-90.

§ 94.20-5 General.

(a) Equipment for lifeboats, liferafts, lifefloats, and buoyant apparatus shall be of good quality, efficient for the purpose they are intended to serve, and kept in good condition.

(b) Lifeboats, liferafts, lifefloats, and buoyant apparatus shall be fully equipped before the vessel is navigated and the equipment shall remain in such lifesaving appliances throughout the voyage, except as provided in § 97.15-45(e) of this subchapter.

(c) It shall be unlawful to stow in any lifeboat, liferaft, lifefloat, or buoyant apparatus any article not required by this subpart unless such article can be properly stowed so as not to reduce the seating capacity or space available to the occupants and so as not to adversely affect the seaworthiness of such appliances or, in the case of lifeboats, overload the davits or winches.

(d) Loose equipment, except boathooks in lifeboats, shall be securely attached to the lifesaving appliance to which it belongs.

§ 94.20-10 Required equipment for lifeboats.

(a) The lifeboats for all vessels shall be equipped in accordance with Table 94.20-10(a). For a description of the items contained in this table, and the units comprising the items, see the applicable paragraphs of § 94.20-15. The letter identification prefixing the item in the table corresponds to the paragraph designations in § 94.20-15.

TABLE 94.20-10(a)

Letter ident.	Item	Ocean and coastwise		Great Lakes		Lakes, bays, and sounds; and rivers
		Other than seabarges	Seagoing barges	Vessels carrycargo	Other	
a	Bailer	1	None	1	None	None
b	Bilge pump	[1] 1	None	None	None	None
c	Boathooks	2	2	1	1	1
d	Bucket	2	1	1	1	1
e	Compass and mounting	1	None	None	None	None
f	Ditty bag	1	None	None	None	None
g	Drinking cups	1	1	None	None	None
h	Fire extinguishers (motor-propelled lifeboats only).	2	2	2	2	2
i	First-aid Kit	1	None	None	None	None
j	Flashlight	1	None	1	None	None
k	Hatchets	2	None	2	1	1
l	Heaving line	2	None	None	None	None
m	Jackknife	1	1	None	None	None

TABLE 94.20–10(a)—Continued

Letter ident.	Item	Ocean and coastwise		Great Lakes		Lakes, bays, and sounds; and rivers
		Other than sea-barges	Seago-ing barges	Ves-sels carry-cargo	Other	
n	Ladder, lifeboat, gunwale	1	None	None	None	None
o	Lantern	1	1	1	1	1
p	Lifeline	1	1	1	1	1
q	Life preservers	2	2	2	2	2
r	Locker	1	None	1	None	None
s	Mast and sail (oar-propelled lifeboats only)	1	None	None	None	None
t	Matches (boxes)	2	2	1	1	1
u	Milk, condensed (pounds per person)	1	None	None	None	None
v	Mirrors, signaling	2	None	None	None	None
w	Oars	[2] 1 unit	[2] 1 unit	[2] 1 unit	[2] 1 unit	[2] 1 unit
x	Oil, illuminating (quarts)	1	None	None	None	None
y	Oil, storm (gallons)	1	None	1	None	None
z	Painter	2	1	2	1	1
aa	Plugs	1	1	1	1	1
bb	Provisions (pounds per person)	2	None	None	None	None
cc	Rowlocks	[2] 1 unit	[2] 1 unit	[2] 1 unit	[2] 1 unit	[2] 1 unit
dd	Rudder and tiller	1	1	1	1	None
ee	Sea anchor	1	None	1	None	None
ff	Signals, distress, floating orange smoke	2	None	None	None	None
gg	Signals, distress, red hand flare	[2] 1 unit	None	[2] ½ unit	None	None
hh	Signals, distress, red parachute flare	[2 3] 1 unit	None	[2] ½ unit	None	None
ii	Tool kit (motor-propelled lifeboat only)	[2] 1 unit	[2] 1 unit	[2] 1 unit	[2] 1 unit	[2] 1 unit
jj	Water (quarts per person)	3	1	None	None	None
kk	Whistle, signaling	1	None	None	None	None
ll	Fishing kit	1	None	None	None	None
mm	Cover, protecting	1	None	None	None	None
nn	Signals, lifesaving	1	None	None	None	None
oo	Desalting kit	[4] 1	None	None	None	None

[1] Motor-propelled lifeboats, certified for 100 or more persons, shall be fitted with an additional hand bilge pump of an approved type or a power bilge pump.
[2] For description of units, see § 94.20–15.
[3] Vessels in coastwise service need only carry 1 unit for each 5 lifeboats or fraction thereof.
[4] Optional equipment. See § 94.20–15(jj) water.

§ 94.20–15 Description of equipment for lifeboats.

(a) *Bailer.* The bailer shall have a lanyard attached and shall be of sufficient size and suitable for bailing.

(b) *Bilge pump.* Bilge pumps shall be of an approved type, constructed in accordance with Subpart 160.044 of Subchapter Q (Specifications) of this chapter. They shall be of the size given in Table 94.20–15(b) depending upon the capacity of the lifeboat as determined by the six-tenths rule as described in § 160.035–8(b) of Subchapter Q (Specifications) of this chapter.

(c) *Boathooks.* Boathooks shall be of the single hook ball-point type. Boathook handles shall be of clear grained white ash, or equivalent, and of a length and diameter as given in Table 94.20–15(c).

TABLE 94.20–15(b)

Capacity of lifeboat, cubic feet		Bilge pump size
Over	Not over	
.....	330	1
330	700	2
700	.....	3

TABLE 94.20–15(c)

Length of lifeboat, feet		Boathook handles	
Over	Not over	Diameter, inches	Length, feet
.....	23	1½	8
23	29	1¾	10
29	.....	2	12

(d) *Bucket.* The bucket shall be of heavy gage galvanized iron, or other suitable corrosion-resistant metal, of not less than 2-gallon capacity, and shall have a 6-foot lanyard of 12-thread manila attached.

(e) *Compass and mounting.* The compass and mounting shall be of an approved type constructed in accordance with U.S. Coast Guard specification dated December 14, 1944.

(f) *Ditty bag.* The ditty bag shall consist of a canvas bag and shall contain a sailmaker's palm, needles, sail twine, marline, and marline spike.

(g) *Drinking cups.* Drinking cups shall be enamel coated or plastic, graduated in ounces, and be provided with lanyards 3 feet in length.

(h) *Fire extinguisher.* Fire extinguishers shall be of approved Type B-C, Size I (see § 95.50–5 of this subchapter). One shall be attached to each end of the lifeboat.

(i) *First-aid kit.* The first-aid kit shall be of an approved type, constructed and fitted in accordance with Subpart 160.041 of Subchapter Q (Specifications) of this chapter.

(j) *Flashlights.* The flashlight shall be of an approved size No. 3, constructed in accordance with Subpart 161.008 of this chapter. Three spare cells (or one 3-cell battery) and two spare bulbs, stowed in a watertight container, shall be provided with each flashlight. Batteries shall be replaced yearly during the annual stripping, cleaning, and overhaul of the lifeboat.

(k) *Hatchet.* Hatchets shall be of an approved type, constructed in accordance with Subpart 160.013 of Subchapter Q (Specifications) of this chapter. They shall be attached to the lifeboat by individual lanyards and be readily available for use, one at each end of the lifeboat.

(l) *Heaving line.* The heaving line shall be of adequate strength, 10 fathoms in length, and 1 inch in circumference. It shall be of such quality as to be buoyant after 24 hours' submergence.

(m) *Jackknife.* The jackknife (with can opener) shall be of an approved type, constructed in accordance with Subpart 160.043 of Subchapter Q (Specifications) of this chapter.

(n) *Ladder, lifeboat gunwale.* The lifeboat gunwale ladder shall consist of 3 flat wood steps cut out for hand holds. The steps shall be spaced 12 inches apart and fastened with ⅝ inch diameter manila rope. Each rope end shall be tied inside the lifeboat at about amidships with the ladder stowed on top of the side benches and ready for immediate use. Other suitable devices may be specifically approved.

(o) *Lantern.* The lantern shall contain sufficient oil to burn for at least 9 hours, and shall be ready for immediate use.

(p) *Lifeline.* The lifeline shall be properly secured to both sides of the lifeboat along its entire length, festooned in bights not longer than 3 feet, with a seine float in each bight, which float may be omitted if the line is of an inherently buoyant material and absorbs little or no water. The lifeline shall be of a size and strength not less than ⅜-inch diameter manila. The bights shall hang to within 12 inches of the water when the lifeboat is light.

(q) *Life preservers.* Life preservers shall be of an approved type, constructed in accordance with the applicable subparts of Subchapter Q (Specifications) of this chapter.

(r) *Locker.* The locker shall be suitable for the storage and preservation of the small items of equipment.

(s) *Mast and sail.* A unit, consisting of a standing lug sail together with the necessary spars and rigging, shall be provided in general agreement with Table 94.20–15(s). The sails shall be of good quality canvas, or other material acceptable to the Commandant, colored Indian Orange (Cable No. 70072, Standard Color Card of America). Rigging shall consist of galvanized wire rope not less than three-sixteenths inch in diameter. The mast and sail shall be protected by a suitable cover.

TABLE 94.20–15(s)

Length of lifeboat, feet		Standing lug sail										Mast [1]			Yard [1]		
Over	Not over	Area, square feet	Luff and head lengths		Leach length		Foot length		Clew to throat		Ounces per square yard	Commercial designation No.	Length		Diameter, inches	Length		Diameter, inches
			Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.			Ft.	In.		Ft.	In.	
	17	58	5	11	12	1	8	10	10	10	14.35	10	11	2	3	6	11	2
17	19	74	6	8	13	8	10	0	12	2	14.35	10	12	6	3	7	8	2
19	21	93	7	5	15	1	11	2	13	8	14.35	10	13	10	3½	8	5	2½
21	23	113	8	3	16	11	12	4	15	1	14.35	10	15	2	3½	9	3	2½
23	25	135	9	0	18	6	13	6	16	6	14.35	10	16	6	4	10	0	3
25	27	158	9	9	20	0	14	7	17	10	17.50	8	17	10	4	10	9	3
27	29	181	10	5	21	5	15	7	19	1	17.50	8	19	2	4½	11	5	3¼
29	31	203	11	0	22	8	16	6	20	3	20.74	6	20	6	4½	12	0	3¼
31		[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]

[1] Mast lengths measured from heel to center of upper halyard sheave. Mast diameters measured at thwart. Mast and yard shall be of clear-grained spruce, fir, or equivalent.
[2] Subject to special consideration.

(t) *Matches.* A box of friction matches in a watertight container stowed in an equipment locker or secured to the underside of the stern thwart if no locker is fitted.

(u) *Milk, condensed.* One pound of condensed milk shall be provided for each person the lifeboat is certified to carry, to be stowed in lockers or other compartments providing suitable protection.

(v) *Mirrors, signaling.* Signaling mirrors shall be of an approved type.

(w) *Oars.* A unit, consisting of a complement of rowing oars and steering oar, shall be provided for each lifeboat in accordance with Table 94.20–15(w), except that motor-propelled and hand-propelled lifeboats need only be equipped with four rowing oars and one steering oar. In any case, the emergency lifeboats shall be provided with the full complement of oars prescribed by the table. All oars shall be buoyant.

TABLE 94.20–15(w)

Length of lifeboat, feet		Number of oars		Length of oars, feet	
Over	Not over	Rowing	Steering	Rowing	Steering
	15	4	1	8	9
15	19	6	1	10	11
19	21	6	1	11	12
21	23	6	1	12	13
23	25	8	1	13	14
25	27	8	1	14	15
27		8	1	15	16

(x) *Oil, illuminating.* One quart of illuminating oil shall be provided in a metal container.

(y) *Oil, storm.* One gallon of vegetable, fish, or animal oil shall be provided in a suitable metal container so constructed as to permit a controlled distribution of oil on the water, and so arranged that it can be attached to the sea anchor.

(z) *Painter.* Painters shall be of manila rope not less than 2¾ inches in circumference, or equivalent, and of a length not less than 3 times the distance between the deck on which the lifeboat is stowed and the light draft of the vessel. For lifeboats in vessels on ocean, coastwise or Great Lakes service one of the painters shall have a long eye splice and be attached to the thwart with a toggle. The other painter shall be attached to the stem.

(aa) *Plug.* The automatic drain required in the lifeboat shall be provided with a cap or plug attached to the lifeboat by a suitable chain.

(bb) *Provisions.* Two pounds of hard bread or its approved equivalent shall be provided for each person the lifeboat is certified to carry. The provisions shall be packaged in hermetically sealed cans of an approved type. The cans shall be stowed in lockers or other compartments providing suitable protection.

(cc) *Rowlocks.* A unit, consisting of sufficient rowlocks and rowlock sockets for each oar required by Table 94.20–15(w) plus 2 additional rowlocks.

The rowlocks shall be attached to the lifeboat by separate chains so as to be available for immediate use, except that the 2 additional spare rowlocks shall be carried in the equipment locker or stowed near the stern if no locker is fitted. The rowlocks and rowlock sockets shall be distributed so as to provide the maximum amount of single banked oars practicable.

(dd) *Rudder and tiller.* The rudder and tiller shall be constructed in accordance with § 160.035-3(t) of Subchapter Q (Specifications) of this chapter.

(ee) *Sea anchor.* The sea anchor shall be of an approved type.

(ff) *Signals, distress, floating orange smoke.* Two approved floating orange smoke distress signals, constructed in accordance with Subpart 160.022 of Subchapter Q (Specifications) of this chapter. The service use of this equipment shall be limited to three years from date of manufacture, and replacement shall be made no later than the first annual stripping, cleaning, and overhaul of the lifeboat after the date of expiration.

(gg) *Signals, distress, red hand flare.* A unit, consisting of twelve approved hand red flare distress signals in a watertight container, constructed in accordance with Subpart 160.021 or Subpart 160.023 of Subchapter Q (Specifications) of this chapter. The service use of this equipment shall be limited to three years from date of manufacture, and replacement shall be no later than the first annual stripping, cleaning, and overhaul of the lifeboat after the date of expiration.

(hh) *Signals, distress, red parachute flare.* A unit, consisting of twelve parachute red flare distress signals with an approved means of projecting them, all contained in a portable watertight container; or twelve approved handheld rocket-propelled parachute red flare distress signals contained in a portable watertight container. Construction shall be in accordance with Subparts 160.024 and 160.028 or Subpart 160.036 of Subchapter Q (Specifications) of this chapter. The service use of this equipment shall be limited to three years from date of manufacture, and replacement shall be no later than the first annual stripping, cleaning, and overhaul of the lifeboat after the date of expiration.

(ii) *Tool kit.* The tool kit shall consist of at least the following tools contained in a suitable container:

(1) One 12-ounce ball peen hammer.

(2) One screwdriver with 6-inch blade.

(3) One pair 8-inch slip joint pliers.

(4) One 8-inch adjustable end wrench.

(jj) *Water.* (1) For each person the lifeboat is certified to carry, there shall be provided 3 quarts of drinking water consisting of nine approved hermetically sealed containers per person, constructed and filled in accordance with Subpart 160.026 of Subchapter Q (Specifications) of this chapter. The service life of this equipment shall be limited to 5 years from date of packing, and replacement shall be made no later than the first annual stripping, cleaning, and overhaul of the lifeboat after the date of expiration. Approved desalting kits capable of producing an equal amount of drinking water may be substituted for not more than one third of the drinking water required to be carried.

(2) The drinking water containers shall be stowed in drinking water tanks, lockers, or other compartments providing suitable protection.

(kk) *Whistle, signaling.* The whistle shall be of the ball-type, of corrosion-resistant construction, with a 3-foot lanyard attached, and in good working order.

(ll) *Fishing kit.* The fishing kit shall be of an approved type constructed in accordance with Subpart 160.061 of Subchapter Q (Specifications) of this chapter.

(mm) *Cover, protecting.* The protecting cover shall be of a highly visible color, and capable of protecting the occupants against injury by exposure.

(nn) *Table of lifesaving signals.* The table shall be in accordance with the provisions of Chapter V, Regulation 16, of the International Convention for Safety of Life at Sea, 1960, and shall be printed on water resistant paper.

(oo) *Desalting kit.* One or more approved desalting kits may be used as a substitute for one third of the required amount of drinking water per person, and shall be constructed in accordance with Subpart 160.058 of Subchapter Q (Specifications) of this chapter.

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGFR 68-32, 33 FR 5719, Apr. 12, 1968; CGFR 70-143, 35 FR 19906, Dec. 30, 1970]

§ 94.20-20 Required equipment for liferafts.

(a) The liferafts for all vessels shall be equipped in accordance with Table 94.20-20(a). For a description of the items contained in this table and the units comprising the items, see the applicable paragraphs of § 94.20-25. The letter identification prefixing the item in the table corresponds to the paragraph designation in § 94.20-25.

TABLE 94.20-20(a)

Letter identification	Item identification	Ocean and coastwise	Great Lakes		Lakes, bays, and sounds; and rivers
			Vessels carrying cargo	Other vessels	
a	Boathook	1	1	1	1
b	Drinking cups	1	None	None	None
c	Jackknife	1	None	None	None
d	Lifeline	[1] 1	[1] 1	[1] 1	[1] 1
e	Matches (boxes)	1	1	None	None
f	Mirrors, signaling	2	None	None	None
g	Oars	[2] 1 unit	[2] 1 unit	[2] 1 unit	[2] 1 unit
h	Oil, storm (gallons)	1	1	None	None
i	Painter	1	1	1	1
j	Provisions (pounds per person)	2	None	None	None
k	Rowlocks	[2] 1 unit	[2] 1 unit	[2] 1 unit	[2] 1 unit
l	Sea anchor	1	1	None	None
m	Signals, distress	[2] 1 unit	[2] 1 unit	None	None
n	Water (quarts per person)	1	None	None	None
o	Water light	1	1	[4] 1	None

[1] Not required on Type A liferafts.
[2] For description of units see § 94.20-25.
[3] 1 unit here means 6 hand red flare distress signals and 6 parachute red flare distress signals with an approved means of projecting them.
[4] Required only on towing vessels of 300 gross tons and over.

(b) Inflatable liferafts shall be equipped with ocean service equipment for vessels on ocean and coastwise routes and with limited service equipment for vessels on Great Lakes, lakes, bays, sounds, and river routes in accordance with Subpart 160.051 of Subchapter Q (Specifications) of this chapter.

NOTE: Subpart 160.051 of Subchapter Q (Specifications) of this chapter requires the servicing of inflatable liferafts at approved servicing facilities. Included in the servicing at an approved servicing facility is a complete inspection of the required equipment by a marine inspector.

§ 94.20-25 Description of equipment for liferafts.

(a) *Boathooks.* Boathooks shall be of the single hook ball point type. Boathook handles shall be of clear grained white ash, or equivalent, not less than 8 feet long and 1½ inches in diameter.

(b) *Drinking cups.* Drinking cups shall be enameled and provided with ⅛-inch cotton lanyards 3 feet in length.

(c) *Jackknife.* The jackknife (with can opener) shall be of an approved type, constructed in accordance with Subpart 160.043 of Subchapter Q (Specifications) of this chapter.

(d) *Lifeline.* The lifeline shall be properly secured around the sides and ends of the liferaft, festooned in

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bights not longer than 3 feet, with a seine float in each bight, which float may be omitted if the line is of an inherently buoyant material and absorbs little or no water. The lifeline shall be of a size and strength not less than ⅜-inch diameter manila.

(e) *Matches.* A box of friction matches in a watertight container.

(f) *Mirrors, signaling.* Signaling mirrors shall be of an approved type.

(g) *Oars.* A unit, consisting of 4 rowing oars and one steering oar not less than 8 feet in length shall be provided for life rafts for 7 persons or more. For life rafts for 6 persons or less, a unit shall consist of 2 paddles not less than 5 feet in length.

(h) *Oil, storm.* One gallon of vegetable, fish, or animal oil shall be provided in a suitable metal container so constructed as to permit a controlled distribution of oil on the water, and so arranged that it can be attached to the sea anchor.

(i) *Painter.* Painters shall be of manila rope not less than 2¾ inches in circumference and of a length not less than 3 times the distance between the deck on which the liferafts are stowed and the light draft of the vessel.

(j) *Provisions.* Two pounds of hard bread or its approved equivalent shall be provided for each person the liferaft is certified to carry. The provisions shall be packaged in hermetically sealed cans of an approved type. The cans shall be stowed in compartments providing suitable protection.

(k) *Rowlocks.* A unit consisting of 5 rowlocks attached to the liferaft by separate chains and ready for immediate use, together with proper rowlock sockets so arranged as to provide 4 rowing positions and one steering position with the liferaft floating either side up. Rowlocks and rowlock sockets are not required on life rafts for 6 persons or less.

(l) *Sea anchor.* The sea anchor shall be constructed of good quality canvas or other satisfactory material, and shall be not less than 2 feet in diameter.

(m) *Signals, distress.* A unit, consisting of equipment as specified in paragraphs (m) (1) to (3) of this section. The service use of this equipment shall be limited to three years from date of manufacture, and replacement shall be made no later than the first annual inspection of the vessel after the date of expiration.

(1) Twelve approved hand red flare distress signals in a watertight container and two approved floating orange smoke distress signals, constructed in accordance with Subparts 160.021 and 160.022 of Subchapter Q (Specifications) of this chapter, or

(2) Twelve approved hand red flare distress signals in a watertight container and 12 approved hand orange smoke distress signals, constructed in accordance with Subparts 160.021 and 160.037 of Subchapter Q (Specifications) of this chapter, or

(3) Twelve approved hand combination flare and smoke distress signals, constructed in accordance with Subpart 160.023 of Subchapter Q (Specifications) of this chapter.

(n) *Water.* (1) For each person the liferaft is certified to carry, there shall be provided one quart of drinking water consisting of three approved hermetically sealed containers per person, constructed and filled in accordance with Subpart 160.026 of Subchapter Q (Specifications) of this chapter. The service life of this equipment shall be limited to five years from date of packing, and replacement shall be made no later than the first annual stripping, cleaning, and overhaul of the liferaft after the date of expiration.

(2) The drinking water containers shall be stowed in compartments providing suitable protection.

(o) *Water light.* The water light must be: (i) Of an approved automatic electric type, constructed in accordance with Subpart 161.010 of this chapter, except as allowed under paragraph (o)(2) of this section; and (ii) Attached to the life raft by a 12-thread manila or equivalent synthetic lanyard, at least 5.5 meters (18 feet) in length.

(2) A water light constructed in accordance with former Subpart 160.012 or 161.001 of this chapter that was installed before January 1, 1972 may be retained in an existing installation as long as it is maintained in good condition.

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGFR 69-72, 34 FR 17484, Oct. 29, 1969; 45 FR 64187, Sept. 29, 1980]

§ 94.20-30 Required equipment for lifefloats and buoyant apparatus.

(a) The lifefloats and buoyant apparatus for all vessels shall be equipped in accordance with Table 94.20-30(a). For a description of the items contained in this table, and the units comprising the items, see the applicable paragraphs of § 94.20-35. The letter identification prefixing the item in the table corresponds to the paragraph designation in § 94.20-35.

TABLE 94.20-30(a)

Letter identification	Item	Number required for each lifefloat and buoyant apparatus		
		Ocean and coastwise	Great Lakes	Lakes, bays, sounds, and rivers
a	Boathook [1]	1	1	
b	Lifeline	1	1	
c	Paddles [1]	2	2	
d	Painter	1	1	
e	Water light [2]	1	1	None

[1] Buoyant apparatus need not be equipped with boathook or paddles.
[2] Equipment for 24 persons or less not required to have a water light.

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGFR 63-65, 33 FR 19986, Dec. 28, 1968]

§ 94.20-35 Description of equipment for lifefloats and buoyant apparatus.

(a) *Boathook.* Boathooks shall be of the single hook ball point type. Boathook handles shall be of clear grained white ash, or equivalent, not less than 6 feet long and 1½ inches in diameter.

(b) *Lifeline.* The lifeline shall be properly secured around the sides and ends of the lifefloat or buoyant apparatus, festooned in bights not longer than 3 feet, with a seine float in each bight, which float may be omitted if the line is of an inherently buoyant material and absorbs little or no water. The lifeline shall be of a size and strength not less than ⅜-inch diameter manila.

(c) *Paddles.* Paddles shall be not less than 5 feet long.

(d) *Painter.* (1) The painter for buoyant apparatus shall be of manila rope not less than 2 inches in circumference and of a length not less than 6 feet plus the distance between the deck on which the buoyant apparatus is stowed and the light draft of the vessel.

(2) The painter for lifefloats shall be of manila rope not less than 2¾ inches in circumference and of a length not less than 3 times the distance between the deck on which the lifefloats are stowed and the light draft of the vessel.

(e) *Water light.* The water light must be: (i) Of an approved automatic electric type, constructed in accordance with Subpart 161.010 of this chapter, except as allowed under paragraph (e)(2) of this section; and (ii) Attached to the life float or bouyant apparatus by a 12-thread manila or equivalent synthetic lanyard, at least 5.5 meters (18 feet) in length.

(2) A water light constructed in accordance with former Subpart 160.012 or 161.001 of this chapter that was installed before January 1, 1972 may be retained in an existing installation as long as it is maintained in good condition.

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGFR 69-72, 34 FR 17484, Oct. 29, 1969; 45 FR 64187, Sept. 29, 1980]

§ 94.20-90 Vessels contracted for prior to May 26, 1965.

(a) Vessels contracted for prior to May 26, 1965, shall meet the following requirements:

(1) Except as specifically modified by this paragraph, the requirements of §§ 94.20-5 through 94.20-35 shall be complied with insofar as the number of items of equipment and the method of stowage of the equipment is concerned. Existing items of equipment previously approved, but not meeting the applicable specifications or requirements set forth in §§ 94.20-5 through 94.20-35 may be continued in service so long as they are maintained in a good condition to the satisfaction of the Officer in Charge, Marine Inspection. All new installations or replacements shall meet the applicable

specifications or requirements in this part.

(2) Lifeboats previously approved without automatic drain plugs shall have two plugs or caps attached to the lifeboat by separate chains.

(3) Decked lifeboats shall have no drain holes or plugs, but shall be equipped with two bilge pumps.

(4) On vessels certificated for ocean or coastwise service and contracted for prior to November 19, 1952, unless other approved means are provided to achieve the same purpose, three ½-inch-diameter manila grablines shall be fitted extending from gunwale to gunwale under the keel to enable persons to cling to and climb upon the upturned lifeboat. The ends of each grabline shall be securely attached to the side benches or other permanent part of the lifeboat and each grabline shall be made up with figure eight knots spaced approximately 18 inches apart in order to provide hand grips. Means shall be provided for taking up any slack in the grablines.

Subpart 94.25—Davits for Lifeboats

§ 94.25-1 Application.

(a) The provisions of this subpart, with the exception of § 94.25-90, shall apply to all vessels contracted for on or after May 26, 1965. Vessels contracted for prior to May 26, 1965, shall meet the requirements of § 94.25-90.

§ 94.25-5 General.

(a) All gravity and mechanical type davits shall be of an approved type, constructed in accordance with Subpart 160.032 of Subchapter Q (Specifications) of this chapter.

(b) Davits for lifeboats weighing in excess of 5,000 pounds when fully equipped (but without persons) shall be of the gravity type.

(c) All davits shall be so arranged that the lifeboats do not require lifting prior to being swung out, except on small vessels where such requirement is unreasonable or impracticable in the opinion of the Officer in Charge, Marine Inspection.

(d) All davits and necessary gear shall be such as to meet the requirements for the installation test set forth in Subpart 94.35. The design, arrangements, and installation shall be such as to preclude undue delay in getting lifeboats into the water, and shall be of such strength that the lifeboats can be turned out manned by a launching crew and then safely lowered with the full complement of persons and equipment, with the ship listed to 15 degrees either way and with a 10-degree trim.

(e) Radial davits, where permitted, shall comply with the following requirements:

(1) They shall be fitted with means to prevent them from being jerked from their sockets.

(2) They shall maintain a factor of safety of six based on the weight of the fully equipped and loaded lifeboat, except that the weight of the fully equipped lifeboat alone may be used where the lifeboat is launched before being loaded with people.

(3) They shall be fitted with hand gear of sufficient power to insure that the boat can be turned out against a maximum list of 15 degrees.

(4) They shall be shop tested and show no permanent set or undue stress when subjected to a load equal to 2.2 times the working load. In addition, they shall be shop tested with a load equal to 1.1 times the weight of the fully equipped lifeboat with the davit set up to simulate a 15-degree list inboard, and it shall be determined that the hand gear can adequately handle the load in this condition.

(f) Davits shall be so disposed on one or more decks as to permit the lifeboats placed under them to be safely lowered without interference from the operation of any other davits.

(g) On a vessel on which inflatable liferafts have been substituted for lifeboats, a launching device for each lifeboat to be used for rescue purposes shall be installed. Radial type davits or other means may be used in sheltered waters if acceptable to the Officer in Charge, Marine Inspection.

§ 94.25-10 Requirements for vessels in ocean or coastwise service.

(a) All vessels shall be fitted with a set of approved gravity or mechanical davits for each lifeboat carried except that on small vessels radial type davits

or other means may be used if specifically approved by the Commandant.

(b) All davit installations shall have 2 lifelines fitted to a davit span. The lifelines shall be of such length as to reach the water at the lightest sea going draft with the vessel listed 15 degrees either way.

§ 94.25-15 Requirements for vessels in Great Lakes, lakes, bays, and sounds, or river service.

(a) All vessels shall be fitted with a set of approved gravity or mechanical davits for each lifeboat carried, except that on small vessels, radial type davits or other means may be used if specifically approved by the Commandant.

(b) For vessels in Great Lakes service, all davit installations shall have 2 lifelines fitted to a davit span. The lifelines shall be of such length as to reach the water at the lightest draft with the vessel listed 15 degrees either way.

§ 94.25-90 Vessels contracted for prior to May 26, 1965.

(a) Vessels contracted for prior to May 26, 1965, shall meet the following requirements:

(1) Except as specifically modified by this paragraph, the requirements of §§ 94.25-5 through 94.25-15 shall be complied with insofar as the number and general type of equipment is concerned. Existing items of equipment previously approved, but not meeting the applicable specifications or requirements set forth in §§ 94.25-5 through 94.25-15 may be continued in service so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs, alterations, and replacements may be made to the same standards as the original installation. However, all new installations or major replacements shall meet the applicable specifications or requirements.

(2) On vessels the keels of which were laid after September 1, 1941, all davits for lifeboats weighing in excess of 5,000 pounds when fully equipped (but without persons) shall be of the gravity type.

Subpart 94.30—Lifeboat Winches

§ 94.30-1 Application.

(a) The provisions of this subpart, with the exception of § 94.30-90, shall apply to all vessels contracted for on or after November 19, 1952. Vessels contracted for prior to November 19, 1952, shall meet the requirements of § 94.30-90.

§ 94.30-5 General.

(a) All lifeboat winches shall be of an approved type, constructed in accordance with Subpart 160.015 of Subchapter Q (Specifications) of this chapter.

(b) Where ice conditions are likely to be encountered, suitable fabric covers shall be provided for all lifeboat winches, so fitted over exposed mechanism, that ice formations may be readily broken adrift when necessary to operate the winch.

(c) Where lifeboat winches are used, wire falls shall be employed.

§ 94.30-10 Number and type required.

(a) Lifeboat winches shall be fitted for each set of davits on all vessels in ocean or coastwise service where the height of the deck on which lifeboats are carried exceeds 20 feet from the lightest seagoing draft.

(b) Lifeboat winches shall be used in all cases where gravity type davits are employed.

(c) Lifeboat winches for use with gravity davits shall have grooved drums of such size that there will be only one layer of wire on the drums. Lifeboat winches for use with mechanical davits need not have grooved drums, and may be designed to take more than one layer of wire.

§ 94.30-15 Installation.

(a) Lifeboat winches shall be so located that the operator can observe the movement of the lifeboat during the lowering operation. In addition, any electrical controls provided shall meet the requirements of Subpart 111.65 of Subchapter J (Electrical Engineering) of this chapter.

(b) The lead of the falls to the lifeboat winches and length and size of

wire shall be in accordance with Subpart 94.33.

§ 94.30-90 Vessels contracted for prior to November 19, 1952.

(a) Vessels contracted for prior to November 19, 1952, shall meet the following requirements:

(1) Except as specifically modified by this paragraph, the requirements of §§ 94.30-5 through 94.30-15 with the exception of § 94.30-10(a), shall be complied with insofar as the number and general type of equipment is concerned. Existing items of equipment previously approved, but not meeting the applicable specifications or requirements set forth in §§ 94.30-5 through 94.30-15 may be continued in service so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. However, all new installations or major replacements shall meet the applicable specifications or requirements.

(2) Existing arrangements previously approved, but not meeting the requirements of § 94.30-15(a), need not be changed. However, new installations or major alterations should conform with such requirements where reasonable and practicable.

(3) Where lifeboat winches are used with gravity davits, the installation shall comply with the requirements contained in § 160.015-3(k) of Subchapter Q (Specifications) of this chapter for lifeboat winches.

Subpart 94.33—Blocks and Falls for Lifeboats

§ 94.33-1 Application.

(a) The provisions of this subpart, with the exception of § 94.33-90, shall apply to all vessels contracted for on or after May 26, 1965. Vessels contracted for prior to May 26, 1965, shall meet the requirements of § 94.33-90.

§ 94.33-5 General.

(a) All blocks, falls, fairleads, padeyes, shackles, links, fastenings, etc., used in connection with lifeboat gear shall be designed with a minimum factor of safety of six, based on the maximum working load.

(b) Falls shall be of such length that the lifeboat may be lowered to the water with the vessel at its lightest draft, listed 15 degrees either way.

(c) Falls, where exposed and subject to damage or fouling, shall be suitably protected.

(d) Such blocks or other fittings shall be fitted as are necessary to permit the falls to lead fair in all positions of the davits.

(e) Means for lubrication shall be provided for all moving parts of blocks, sheaves, fairleads, etc.

§ 94.33-10 Installations where lifeboat winches are used.

(a) All falls shall be of wire rope.

(b) Wire rope falls of 6 × 19 regular lay filler wire construction, prelubricated at the factory with suitable neutral wire rope lubricant, shall be accepted as standard. Any other wire rope, superior or equal to this minimum standard may be used if specifically approved.

(c) Not more than two-part falls may be used, except in special cases where three-part falls may be permitted by the Commandant.

(d) The lead sheaves to the drums shall be located so as to provide fleet angles of not more than 8 degrees for grooved drums and not more than 4 degrees for nongrooved drums. By fleet angle is meant the angle included between an imaginary line from the lead sheave perpendicular to the axis of the drum and the line formed by the wire rope when led from the lead sheave to either extremity of the drum.

(e) Sheaves shall have a diameter at the base of the groove at least equal to 12 times the diameter of the wire rope.

§ 94.33-15 Installations where lifeboat winches are not used.

(a) All falls shall be of manila rope or equivalent. Wire rope may not be used.

(b) All vessels of over 1,000 gross tons shall be provided with covered tubs, boxes, or reels for the stowage and protection of the falls, and cruciform bitts shall be provided for properly lowering the lifeboats. Vessels of 1,000 gross tons and less shall have the

falls protected from ice and ready for immediate use, and shall be provided with suitable lowering bitts or cleats.

(c) There shall be ample clearance between the cheeks of all blocks. The width between the cheeks shall be ½ inch greater than the diameter of new rope when rope of 3¾ inches circumference or greater is used. Blocks for smaller rope shall be designed with proportional clearances.

§ 94.33-90 Vessels contracted for prior to May 26, 1965.

(a) Vessels contracted for prior to May 26, 1965, shall meet the following requirements:

(1) Except as specifically modified by this paragraph, the requirements of §§ 94.33-5 through 94.33-15, as applicable, shall be complied with insofar as the general type of equipment is concerned. Existing equipment previously approved, but not meeting the detailed requirements of §§ 94.33-5 through 94.33-15 may be continued in service so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs, alterations and replacements may be made to the same standards as the original installation. However, all new installations or major replacements shall meet the applicable requirements.

Subpart 94.35—Installation of Lifeboats, Davits, and Winches

§ 94.35-1 Application.

(a) The provisions of this subpart shall apply to all installations contracted for on or after November 19, 1952, except as set forth in § 97.15-45(c) of this subchapter.

§ 94.35-5 Tests and examinations.

(a) Upon completion of installation of lifeboats, davits, or winches, tests and examinations as required by this section shall be made to the satisfaction of the inspector before the vessel may be navigated.

(b) The lifeboat shall be swung out from the chocks and lowered to the embarkation deck. At this point the lifeboat shall be loaded with deadweight equivalent to the number of persons allowed (165 pounds per person) together with weight of equipment, plus 10 percent of the total load including the weight of the lifeboat. No persons shall be permitted in the lifeboat while it is being loaded or lowered. The lifeboat shall then be lowered to the water and disengaged from the falls.

(1) None of the equipment or parts thereof nor deck connections shall show signs of permanent set or excessive deflection.

(2) Mechanical and radial type davits shall be capable of being swung out without lifting the lifeboat, except on small vessels where such requirement is unreasonable or impracticable in the opinion of the Officer in Charge, Marine Inspection.

(3) The falls shall be of sufficient length to lower the lifeboat as required by § 94.33-5(b).

(4) Where lifeboat winches are used, the following additional determinations shall be made:

(i) During lowering, the lifeboat shall be stopped at intervals of approximately six feet by the action of the counterweight alone. The counterweight shall be capable of stopping and holding the lifeboat. The brake action shall be smooth, but positive.

(ii) Brakes exposed to the weather shall be tested under the load conditions with the braking surfaces both wet and dry.

(iii) The governor brake shall be capable of controlling the speed of lowering of the fully equipped lifeboat with its complement of persons on board to not more than 120 feet per minute. In addition, the speed of lowering of the fully equipped lifeboat without its complement of persons shall be not less than 40 feet per minute.

Subpart 94.40—Life Preservers

§ 94.40-1 Application.

(a) The provisions of this subpart, with the exception of § 94.40-90, shall apply to all vessels contracted for on or after May 26, 1965. Vessels contracted for prior to May 26, 1965, shall meet the requirements of § 94.40-90.

§ 94.40-5 General.

(a) All life preservers shall be of an approved type, constructed in accordance with Subparts 160.002, 160.005, or 160.055 of Subchapter Q (Specifications) of this chapter.

(b) All life preservers on vessels on an international voyage shall be provided with a whistle of the ball-type, of corrosion-resistant construction, with a 3-foot lanyard attached, and in good working order. It shall be attached to the life preserver by the lanyard alone without hooks, snaps, clips, etc., and shall extend not less than 15 inches from the life preserver body. While stowed on the life preserver, the whistle lanyard shall be coiled and stopped-off.

§ 94.40-10 Number required.

(a) Except as specifically modified by paragraph (b) of this section, all vessels shall be provided with an approved life preserver for each person on board. An additional number of life preservers shall be provided for the personnel on watch in the engineroom and pilothouse, and at the bow lookout.

(b) For vessels in Great Lakes service of 3000 tons or over having berthing and/or working spaces forward widely separated from messing or recreational spaces aft there shall be provided in addition to those life preservers required by paragraph (a) of this section sufficient additional life preservers for 50 percent of the total number of persons on board.

(c) When children are carried, a suitable number of children's life preservers shall be provided.

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGFR 66-33, 31 FR 15284, Dec. 6, 1966]

§ 94.40-15 Distribution and stowage.

(a) *Distribution.* (1) Life preservers shall be distributed throughout the cabins, staterooms, berths, and other places convenient for each person on board. The stowage of the additional number of life preservers required by § 94.40-10(a) shall be such that they are readily accessible to personnel on watch in the engineroom and pilothouse, and at the bow lookout.

(2) The additional 50 percent life preservers required by § 94.40-10(b) shall be properly stowed in the vicinity of the lifeboats.

(b) *Stowage.* (1) Lockers, boxes, and closets in which life preservers are stowed shall not be capable of being locked, shall be plainly marked, and the life preservers contained therein shall be readily available.

(2) Life preservers stowed overhead shall be so supported that they can be quickly released and distributed. Where life preservers are stowed at a height greater than 7 feet from the deck below, efficient means shall be provided for their immediate release and distribution to be operated by persons standing on the deck.

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGFR 66-33, 31 FR 15284, Dec. 6, 1966]

§ 94.40-20 Personal flotation device lights.

(a) Each life preserver carried on a vessel engaged in ocean, coastwise, or Great Lakes service after June 30, 1980, must have a personal flotation device light that is approved under Subpart 161.012 of this chapter.

(b) Each light required by this section must be securely attached to the front shoulder area of a life preserver.

(46 U.S.C. 375, 390b, 391a, 416, 481, 528p. 1454, and 1488; 49 U.S.C. 1655(b); 50 U.S.C. 198 and 40 CFR 1.46)

[CGD 76-028, 44 FR 38784, July 2, 1979]

§ 94.40-25 Retroreflective material.

(a) Each life preserver carried on a vessel after June 30, 1980, must have at least 200 sq. cm (31 sq. in.) of retroreflective material attached on its front side, at least 200 sq. cm on its back side, and at least 200 sq. cm of material on each of its reversible sides.

(b) Retroreflective material required by this section must be Type I material that is approved under Subpart 164.018 of this chapter.

(c) The retroreflective material attached on each side of a life preserver must be divided equally between the upper quadrants of the side, and the material in each quadrant must be attached as closely as possible to the shoulder area of the life preserver.

(46 U.S.C. 375, 390b, 391a, 416, 481, 528p. 1454, and 1488; 49 U.S.C. 1655(b); 50 U.S.C. 198 and 40 CFR 1.46)

[CGD 76-028, 44 FR 38784, July 2, 1979]

§ 94.40-90 Vessels contracted for prior to May 26, 1965.

(a) Vessels contracted for prior to May 26, 1965, shall meet the following requirements:

(1) Except as specifically modified by this paragraph, the requirements of §§ 94.40-5 through 94.40-15 shall be complied with insofar as the number of items of equipment and the method of stowage is concerned. Existing items of equipment previously approved, but not meeting the applicable specifications or requirements set forth in §§ 94.40-5 through 94.40-15 may be continued in service so long as they are serviceable and in good condition to the satisfaction of the Officer in Charge, Marine Inspection, except that:

(i) All kapok and fibrous glass life preservers which do not have plastic-covered pad inserts, as required by Subparts 160.002 and 160.005 of Subchapter Q (Specifications) of this chapter, shall be removed from service.

(2) All new installations or replacements shall meet the applicable specifications or requirements, except that:

(i) Cork and balsa wood life preservers, constructed in accordance with the applicable provisions of Subpart 160.003 or 160.004 and manufactured as approved life preservers prior to July 1, 1965, may be accepted as new or replacement equipment required by this subchapter if such life preservers are serviceable and in good condition to the satisfaction of the Officer in Charge, Marine Inspection: *Provided, however,* That such life preservers bearing basic Approval No. 160.003 or 160.004 shall not be considered as approved equipment meeting the requirements for those cargo ships on an international voyage, constructed or contracted for on or after May 26, 1965.

Subpart 94.41—Exposure Suits

SOURCE: CGD 76-003a, 45 FR 24477, Apr. 10, 1980; 45 FR 29588, May 5, 1980, unless otherwise noted.

§ 94.41-1 Applicability.

This subpart applies to each vessel when operating on the Great Lakes.

§ 94.41-5 Number and type required.

(a) Each vessel must carry an exposure suit for each person on board.

(b) In addition to the exposure suits required by paragraph (a) of this section, the engine room, pilothouse, bow lookout, and each work station must have enough exposure suits to equal the number of persons normally on watch in, or assigned to, the station at one time. However, an exposure suit need not be provided at a watch or work station for a person whose cabin, stateroom, or berthing area (and the exposure suits stowed in that location) is readily accessible to the work station.

(c) Except as provided by paragraph (d) of this section, each exposure suit on a vessel must be of a type approved under Subpart 160.071 of this chapter.

(d) An exposure suit in use on a vessel before November 1, 1980 may remain in use on the vessel in place of an exposure suit approved under Subpart 160 of this chapter if:

(1) It is similar or identical to an approved suit, and

(2) It is in serviceable condition.

§ 94.41-10 Stowage containers.

(a) No stowage container for exposure suits may be capable of being locked.

(b) Exposure suits stowed overhead must be supported in a manner that allows quick release for distribution.

(c) If exposure suits are stowed more than 2.1 m (7 ft.) above the deck, a means for quick release must be provided and must be capable of operation from the deck.

Subpart 94.43—Ring Life Buoys and Water Lights

§ 94.43-1 Application.

(a) The provisions of this subpart, with the exception of § 94.43-90, shall apply to all vessels contracted for on or after May 26, 1965. Vessels contracted for prior to May 26, 1965, shall meet the requirements of § 94.43-90.

§ 94.43-5 General.

(a) All ring life buoys shall be of an approved type, constructed in accordance with Subpart 160.009 or 160.050 of Subchapter Q (Specifications) of this chapter.

(b) Each water light must be of an approved automatic electric type, constructed in accordance with Subpart 161.010 of this chapter; except a water light constructed in accordance with former Subpart 160.012 or 161.001 of this chapter that was installed before January 1, 1972 may be retained in an existing installation as long as it is maintained in good condition.

(c) A self-activating smoke signal—

(1) Must be approved in accordance with Subpart 160.057 of this chapter; and

(2) May not be more than 3 years older than the stamped date of manufacture.

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGFR 69-72, 34 FR 17484, Oct. 29, 1969; CGFR 72-45, 37 FR 5031, Mar. 9, 1972; 45 FR 64188, Sept. 29, 1980]

§ 94.43-10 Number required.

(a) The minimum number of approved 30-inch ring life buoys and the minimum number of which shall have water lights attached, shall be in accordance with Table 94.43-10(a): *Provided,* That unmanned barges are exempt from this section.

(b) One of the ring life buoys on each side of the vessel shall have secured to it a line at least 15 fathoms in length. On vessels on an international voyage, the line shall be of a buoyant type.

TABLE 94.43-10(a)

Length of vessel in feet	Ocean [1] [2]		All services other than ocean [2]	
	Minimum number of ring life buoys	Minimum number of ring life buoys in column 2 which shall have water lights attached	Minimum number of ring life buoys	Minimum number of ring life buoys in column 4 which shall have water lights attached
Column 1	Column 2	Column 3	Column 4	Column 5
Under 100	3	2	2	0
100 and under 200	6	3	4	2
200 and under 300	8	6	6	2
300 and under 400	12	6	12	4
400 and under 600	18	9	18	9
600 and under 800	24	12	24	12
800 and over	30	15	30	15

[1] Manned barges shall be equipped with 1 ring life buoy at each end of the vessel.
[2] Vessels 500 gross tons and over on an international voyage, regardless of length, shall carry at least 8 lifebuoys; half of which shall have water lights attached.

(c) On vessels on an international voyage, at least two of the ring life buoys with water lights attached as required by Table 94.43-10(a) shall also be provided with an approved self-activated smoke signal and shall be capable of quick release from the bridge.

(d) On vessels on an international voyage, the ring life buoys required by this section shall be orange in color.

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGFR 68-65, 33 FR 19987, Dec. 28, 1968]

§ 94.43-15 Distribution and securing.

(a) All ring life buoys shall be placed so as to be readily accessible to the persons on board, and their positions plainly indicated so as to be known to the persons concerned.

(b) The ring life buoys shall always be capable of being cast loose, and shall not be permanently secured in any way.

§ 94.43-90 Vessels contracted for prior to May 26, 1965.

(a) Vessels contracted for prior to May 26, 1965, shall meet the following requirements:

(1) Except as specifically modified by this paragraph, the requirements of §§ 94.43-5 through 94.43-15 shall be complied with insofar as the number of items of equipment and the method of stowage is concerned. Existing items of equipment previously approved, but not meeting the applicable specifications or requirements set forth in §§ 94.43-5 through 94.43-15 may be continued in service so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. All new installations or replacements shall meet the applicable specifications or requirements in this subpart.

(2) Any vessel attending offshore petroleum operations is not permitted to carry water lights which produce an open flame when used or actuated, and such lights shall be removed from the vessel.

[CGFR 65-50, 30 FR 16989, Dec. 30, 1965, as amended by CGFR 66-72, 32 FR 384, Jan. 13, 1967]

Subpart 94.45—Line-Throwing Appliances

§ 94.45-1 Application.

(a) The provisions of this subpart, with the exception of § 94.45-90, shall apply to all mechanically propelled vessels of 150 gross tons and over in ocean or coastwise service. Such vessels contracted for prior to November 19, 1952, shall meet the requirements of § 94.45-90.

§ 94.45-5 General.

(a) Line-throwing appliances of the impulse-projected rocket type, and the equipment auxiliary thereto, shall be of an approved type, constructed in accordance with Subpart 160.040 of Subchapter Q (Specifications) of this chapter. The service use of rockets shall be limited to a period of four years from date of manufacture, and replacement of out-dated items shall be made at the first port of arrival in the United States where such rockets are available, except that replacement shall be made in all cases within twelve months after the date of expiration.

(b) Line-throwing appliances of the shoulder-gun type, and the equipment auxiliary thereto, shall be of an approved type, constructed in accordance with Subpart 160.031 of Subchapter Q (Specifications) of this chapter.

§ 94.45-10 Type required.

(a) All vessels shall be fitted with an approved line-throwing appliance of the impulse-projected rocket type. However, vessels of less than 500 gross tons may substitute a line-throwing appliance of the shoulder-gun type.

§ 94.45-15 Equipment for line-throwing appliances.

(a) The following equipment must be carried for each impulse-projected, rocket-type-line-throwing appliance required by this subpart. The equipment must be stowed with the appliance in a case or box, except for the service lines and the auxiliary line, which may be stowed in an accessible location nearby:

(1) Four rockets, two of which shall be of the buoyant type.

(2) Four service lines that—

(i) Are fabricated of the material specified in the approval of the appliance carried;

(ii) Have a length not less than that specified in the approval of the appliance carried;

(iii) Have a diameter from 7/32 to 9/32 inch;

(iv) Have a breaking strength of at least 500 pounds; and

(v) Are to be kept in a faking box or reel.

(3) Four prime ejector cartridges.

(4) One cleaning brush, one can of oil, and 12 wiping patches.

(5) One set of instructions from the manufacturer.

(6) One auxiliary line that is fabricated of—

(i) Manila and is at least 1,500 feet long and 3 inches or more in circumference; or

(ii) A synthetic material and is at least 1,500 feet long and is certified by the manufacturer to have a breaking strength of at least 9,000 pounds and inhibited to resist the effects of ultraviolet rays.

(b) The following equipment must be carried for each shoulder gun type, line-throwing appliance required by this subpart. The equipment must be stowed with the appliance in a box or case, except for the service lines and the auxiliary line which may be stowed in an accessible location nearby:

(1) Ten service projectiles.

(2) Twenty-five cartridges.

(3) Four service lines to be kept in faking boxes or on reels and to be fabricated of—

(i) Flax or cotton, not less than 400 feet long, ⅜ inch or more in circumference, and having a breaking strength of not less than 250 pounds; or

(ii) Very flexible woven or braided synthetic material, not less than 600 feet long 1/16 inch or more in diameter, having a breaking strength of not less than 140 pounds and inhibited to resist the effects of ultraviolet rays.

(4) One cleaning rod with brush, one can of oil, and 12 wiping patches.

(5) One set of instructions from the manufacturer.

(6) One auxiliary line that is made of either—

(i) Manila and is at least 500 feet long and 3 inches or more in circumference; or

(ii) A synthetic material and is at least 500 feet long, and is certified by the manufacturer to have a minimum breaking strength of 9,000 pounds and inhibited to resist the effects of ultraviolet rays.

[CGD 72-135R, 37 FR 16179, Aug. 11, 1972]

§ 94.45-20 Accessibility.

(a) The line-throwing appliance and its equipment shall be kept easily and readily accessible and ready for use. No part of this equipment shall be used for any other purpose.

§ 94.45-25 Service recommendations.

(a) In firing the line-throwing appliances, the operating instructions and safety precautions furnished by the manufacturer should be followed.

§ 94.45-90 Vessels contracted for prior to November 19, 1952.

(a) Vessels of 150 gross tons and over in ocean or coastwise service contracted for prior to November 19, 1952, shall meet the requirements set forth in §§ 94.45-5 through 94.45-25. However, if a Lyle gun-type line-throwing appliance is already in service on such vessel, it may be continued in use so long as it is in good and serviceable condition, but may not be replaced by a similar installation. Where Lyle guns are used, the following requirements shall be met:

(1) The equipment enumerated in this paragraph shall be carried for Lyle gun type line-throwing appliances. The equipment and the gun shall be stowed together in a suitable case or box. If the case or box does not meet the requirements of Subpart 160.038 of Subchapter Q (Specifications) of this chapter for portable magazine chest, the powder and primers shall be separately stowed in a chest meeting such requirement.

(i) Six service projectiles.

(ii) Eighteen bags (2½ ounces each) of black powder marked "One-half normal charge for Lyle gun, 2½ ounces black powder" in a nonferrous metal screw-top container.

(iii) One approved firing attachment with accessories consisting of lanyard, wrench, washer to fit between barrel and shoulder of firing attachment, blank plug for screwing into gun when firing attachment is not in place, cartridge extractor, and 25 primers in a watertight metal box.

(iv) Twenty-five paper wads.

(v) Four service lines, each 1,700 feet in length, of 7/32-inch to 9/32-inch diameter flax or manila, and having a breaking strength of at least 500 pounds, to be kept in faking boxes or on reels.

(vi) One ram rod, 1 wire brush, 1 can of light petrolatum, and 12 wiping patches.

(vii) One tapered wooden plug for muzzle of gun when not in use.

(viii) One set of instructions furnished by the manufacturer of the gun.

(ix) One auxiliary line, 1,500 feet of 3-inch circumference manila.

(2) Accessibility. Same as § 94.45-20.

Subpart 94.50—Embarkation Aids

§ 94.50-1 Application.

(a) The provisions of this subpart, with the exception of § 94.50-90, shall apply to all vessels other than yachts and fishing vessels contracted for on or after May 26, 1965. Vessels contracted for prior to May 26, 1965, shall meet the requirements of § 94.50-90.

§ 94.50-5 Ladders.

(a) *General.* All ladders required by this section shall be of an approved type constructed in accordance with Subpart 160.017 of Subchapter Q (Specifications) of this chapter.

(b) *Vessels in ocean, coastwise or Great Lakes service.* (1) All vessels in ocean, coastwise or Great Lakes service shall have an approved Type II (chain suspension) ladder for each set of lifeboat davits, but existing ladders previously approved by the Coast Guard may be continued in service so long as they are maintained in good condition. Such ladders shall be kept ready and convenient for use on the lifeboat deck, and shall reach from such deck to the vessel's light water line, no heel assumed.

(2) All ocean and coastwise vessels which normally employ a pilot shall have a ladder for the use of the pilot in addition to the ladders required by paragraph (b)(1) of this section. Suitable spreaders, a man rope, and a safety line shall be kept readily available for use in conjunction with the pilot ladder whenever circumstances may so require. When used, the ladder shall be secured in a position so that each step rests firmly against the ship's side, and so the pilot can gain safe and convenient access to the ship after climbing not more than 30 feet. Whenever the distance from sea level is more than 30 feet, access from the pilot ladder to the ship shall be by means of an accommodation ladder or other equally safe and convenient means. Arrangements shall be such that the rigging of the ladder and the embarkation and debarkation of the pilot is supervised by a responsible officer of the ship, and handholds are provided to assist the pilot to pass safely and conveniently from the head of the ladder into the ship and onto the ship's deck. At night a light shining over the side shall be available for use, and the deck at the position where the pilot boards the ship shall be adequately lighted.

§ 94.50-7 Embarkation aids into inflatable liferafts.

(a) Where inflatable liferafts are substituted for lifeboats, unless freeboard at embarkation point is such that embarkation devices are not necessary, suitable arrangements shall be made for embarkation which shall include sufficient ladders or other suitable devices to facilitate embarkation into the inflatable liferafts when waterborne.

§ 94.50-10 Illumination for lifeboat launching operations.

Each vessel subject to this subchapter must have lights for the continuous illumination of lifeboats that are being launched and lifeboats that are in the water in the immediate vicinity of the vessel. For detailed requirements of the illumination, see § 111.75-15(e) of this chapter.

[CGFR 72-45, 37 FR 5032, Mar. 9, 1972]

§ 94.50-15 Illumination for liferaft stowage areas.

Each vessel subject to this subchapter must have lights for the continuous illumination of the stowage position of liferafts. For detailed requirements of the illumination system, see § 111.75-15(e) of this chapter.

[CGFR 72-45, 37 FR 5032, Mar. 9, 1972]

§ 94.50-90 Vessels contracted for prior to May 26, 1965.

(a) Vessels contracted for prior to May 26, 1965, shall meet the following requirements:

(1) Except as specifically modified by this paragraph, the requirements

of §§ 94.50-5 through 94.50-15 shall be complied with insofar as the number of items of equipment and the method of stowage is concerned. Existing items of equipment previously approved, but not meeting the applicable specifications or requirements of §§ 94.50-5 through 94.50-15 may be continued in service so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. All new installations or replacements shall meet the applicable specifications or requirements.

(2) The illumination for lifeboat launching operations need not meet the detailed requirements of Subchapter J (Electrical Engineering) of this chapter.

Subpart 94.55—Portable Radio Apparatus

§ 94.55-1 Required on international voyage.

(a) All vessels on an international voyage shall be provided with a portable radio apparatus complying with the requirements of the Federal Communications Commission unless at least one lifeboat on each side of the vessel is fitted with a fixed radio installation. Such portable radio shall be kept in the radioroom, chartroom, or other suitable location ready to be moved to one or other of the lifeboats in the event of an emergency.

Subpart 94.60—Emergency Position Indicating Radiobeacon (EPIRB)

§ 94.60-1 Emergency position indicating radiobeacon (EPIRB).

(a) Each self propelled vessel in ocean and coastwise service must have an approved Class A emergency position indicating radiobeacon (EPIRB) that is—

(1) Operative;

(2) Stowed where it is readily accessible for testing and use; and

(3) Stowed in a manner so that it will float free if the vessel sinks.

(b) Compliance with this section is not required for a coastwise vessel—

(1) That carries a VHF radiotelephone that complies with the FCC requirements; and

(2) Whose Certificate of Inspection is endorsed for a route which does not extend more than 20 miles from a harbor of safe refuge.

[CGD 73-24R, 39 FR 10139, Mar. 18, 1974]

Subpart 94.90—Ship's Distress Signals

§ 94.90-1 Application.

(a) The provisions of this subpart shall apply to all manned vessels as specifically noted.

[CGFR 68-32, 33 FR 5719, Apr. 12, 1968]

§ 94.90-5 Vessels in ocean or coastwise service.

(a) All vessels of 150 gross tons and over in ocean and coastwise service shall carry within the pilothouse or on the navigator's bridge 12 approved handheld rocket-propelled parachute red flare distress signals, contained in a portable watertight container, constructed in accordance with Subpart 160.036 of Subchapter Q (Specifications) of this chapter. The service use of the distress signals shall be limited to a period of 3 years from date of manufacture, and replacement of outdated items shall be made at the first port of arrival in the United States where such distress signals are available, except that replacement shall be made in all cases within 12 months after the date of expiration.

(b) All vessels of less than 150 gross tons in ocean and coastwise service carrying persons in addition to the crew shall carry within the pilothouse six hand red flare distress signals and six hand orange smoke distress signals or 12 hand combination flare and smoke distress signals constructed in accordance with Subparts 160.021 and 160.037 or Subpart 160.023 of Subchapter Q (Specifications) of this chapter. Such distress signals shall be stowed in a portable watertight container. The service use of the distress signals shall be limited to a period of 3 years from date of manufacture.

[CGFR 68-32, 33 FR 5719, Apr. 12, 1968]

§ 94.90–10 Vessels in Great Lakes service.

(a) All vessels of 150 gross tons and over in Great Lakes service shall carry within the pilothouse or on the navigator's bridge, 12 approved hand-held red flare distress signals, contained in a portable watertight container, constructed in accordance with Subpart 160.021 or Subpart 160.023 of Subchapter Q (Specifications) of this chapter. The service use of distress signals shall be limited to a period of 3 years from date of manufacture, and replacement of outdated items shall be made at the first port of arrival in the United States where such distress signals are available, except that replacement shall be made in all cases within 12 months after the date of expiration.

[CGFR 68-32, 33 FR 5719, Apr. 12, 1968]

§ 94.90–15 Vessels on short runs.

(a) Distress signals are not required on vessels operating on short runs. A vessel is considered to be on a short run when its operating time away from a dock is limited to approximately 30 minutes.

[CGFR 68-32, 33 FR 5719, Apr. 12, 1968]

PART 95—FIRE PROTECTION EQUIPMENT

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95.01-5 Equipment installed but not required.

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95.05-5 Fire main system.
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95.50-1 Application.
95.50-5 Classification.
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Subpart 95.60—Fire Axes

95.60-1 Application.
95.60-5 Number required.
95.60-10 Location.

AUTHORITY: R.S. 4405, as amended, 4462, as amended; 46 U.S.C. 375, 416. Interpret or apply R.S. 4417, as amended, 4418, as amended, 4426, as amended, 4488, as amended, sec. 10, 35 Stat. 428, as amended, 41 Stat. 305, as amended, secs. 1, 2, 49 Stat. 1544, 1545, as amended, sec. 17, 54 Stat. 166, as amended, sec. 3, 68 Stat. 675, sec. 6(b)(1), 80 Stat. 938; 50 U.S.C. 198, 49 U.S.C. 1655(b); E.O. 11239, July 31, 1965, 30 FR 9671, 3

CFR, 1965, Supp.; 49 CFR 1.46(b) (35 FR 4959), unless otherwise noted.

SOURCE: CGFR 65-50, 30 FR 17001, Dec. 30, 1965, unless otherwise noted.

Subpart 95.01—Application

§ 95.01-1 General.

(a) The provisions of this part shall apply to all vessels except as specifically noted in this part.

§ 95.01-5 Equipment installed but not required.

(a) Where fire detecting or extinguishing systems or equipment are not required, but are installed, the system or equipment and its installation shall meet the requirements of this part.

Subpart 95.05—Fire Detecting and Extinguishing Equipment, Where Required

§ 95.05-1 Fire detecting, manual alarm, and supervised patrol systems.

(a) Fire detecting, manual alarm, and supervised patrol systems are not required except in special cases; but if installed, the systems shall meet the applicable requirements of Part 76 of Subchapter H (Passenger Vessels) of this chapter.

(b) In each compartment containing explosives, and in adjacent cargo compartments, there shall be provided a smoke detecting or other suitable type fire detecting system.

(c) Enclosed spaces which are "specially suitable for vehicles" shall be fitted with an approved fire or smoke detecting system.

[CGFR 66-33, 31 FR 15285, Dec. 6, 1966]

§ 95.05-5 Fire main system.

(a) Fire pumps, hydrants, hose, and nozzles shall be installed on the following vessels:

(1) On all self-propelled vessels.

(2) On all barges with sleeping accommodations for more than 12 persons.

(b) The arrangements and details of the fire main system shall be as set forth in Subpart 95.10.

§ 95.05-10 Fixed fire extinguishing systems.

(a) Approved fire extinguishing systems may be used or required in locations delineated in this section on the following vessels:

(1) On all self-propelled vessels other than yachts and fishing vessels.

(2) On all barges with sleeping accommodations for more than 12 persons.

(b) A fixed carbon dioxide or other approved system shall be installed in all cargo compartments and tanks for combustible cargo, except that vessels engaged exclusively in the carriage of coal or grain in bulk need not be fitted with such system. For cargo compartments and tanks fitted with a fixed carbon dioxide or other approved system a deck foam system is not required. The provisions of this paragraph shall not apply to motorboats contracted for prior to November 19, 1952. In lieu of the carbon dioxide or other approved system, the following systems may be used or required in special cases:

(1) A fixed foam system may be used in cargo tanks.

(2) In cases where a cargo compartment is normally accessible and is considered to be a part of the working or living quarters, a water sprinkling system may be required, and the details of such system will be subject to special approval.

(3) On vessels contracted for prior to January 1, 1962, a steam smothering system may be accepted. However, although existing steam smothering systems may be repaired, replaced, or extended, no new systems contracted for on or after January 1, 1962, will be permitted.

(4) Spaces "specially suitable for vehicles" shall be fitted with an approved carbon dioxide system. Alternately, the Commandant may permit the installation of an approved water sprinkler system or other suitable system.

(c) On vessels other than motorboats a fixed carbon dioxide or other approved system shall be installed in all lamp and paint lockers, oil rooms, and similar spaces. On vessels contracted for prior to January 1, 1962, a steam

smothering system may be accepted in lieu of the carbon dioxide system. However, although existing steam smothering systems may be repaired, replaced, or extended, no new systems contracted for on or after January 1, 1962, will be permitted.

(d) On vessels of 1,000 gross tons and over, contracted for on or after November 19, 1952, or where conversion from coal to oil is contracted for on or after November 19, 1952, a fixed carbon dioxide, foam, or water spray system shall be installed in all spaces containing oil fired boilers, either main or auxiliary, or their fuel oil units, valves, or manifolds in the line between the settling tanks and the boilers.

(e) Fire extinguishing systems shall be provided for internal combustion installations in accordance with the following:

(1) If a fixed fire-extinguishing system is installed to protect an internal combustion propelling machinery installation, the system shall be of the carbon dioxide type.

(2) On vessels of 1,000 gross tons and over on an international voyage, the construction or conversion of which is contracted for on or after May 26, 1965, a fixed carbon dioxide system shall be installed in all spaces containing internal combustion or gas turbine main propulsion machinery, auxiliaries with an aggregate power of 1,000 b. hp. or greater, or their fuel oil units, including purifiers, valves, and manifolds.

(3) On vessels, the construction, conversion or automation of which is contracted for on or after July 1, 1968, the systems shall be in accordance with the following:

(i) A fixed carbon dioxide system shall be installed in any space containing machinery using fuel having a flashpoint of less than 110° F.

(ii) On vessels of 1,000 gross tons and over, a fixed carbon dioxide system shall be installed in all spaces containing internal combustion or gas turbine main propulsion machinery, auxiliaries with an aggregate power of 1,000 b. hp. or greater, or their fuel oil units, including purifiers, valves, and manifolds.

(f) On vessels contracted for on or after November 19, 1952, where an enclosed ventilating system is installed for electric propulsion motors or generators, a fixed carbon dioxide extinguishing system shall be installed in such system.

(g) The arrangements and details of the fixed fire extinguishing systems shall be as set forth in Subparts 95.13 through 95.17.

[CGFR 65-50, 30 FR 17001, Dec. 30, 1965, as amended by CGFR 66-33, 31 FR 15285, Dec. 6, 1966; CGFR 67-90, 33 FR 1016, Jan. 26, 1968]

§ 95.05-15 Hand portable fire extinguishers and semiportable fire extinguishing systems.

(a) Approved hand portable fire extinguishers and semiportable fire extinguishing systems shall be installed on all vessels, other than unmanned barges and fishing vessels, as set forth in Subpart 95.50.

§ 95.05-20 Sand.

(a) On vessels of over 1,000 gross tons there shall be in each space containing oil fired boilers a metal receptacle containing not less than 10 cubic feet of sand, sawdust impregnated with soda, or other approved dry materials together with a scoop or shaker for distributing the same. On vessels of 1,000 gross tons or less, at least 5 cubic feet of such materials shall be similarly carried.

(b) In lieu of the requirements in paragraph (a) of this section, one B-II fire extinguisher may be substituted.

Subpart 95.10—Fire Main System, Details

§ 95.10-1 Application.

(a) The provisions of this subpart, with the exception of § 95.10-90, shall apply to all fire main installations contracted for on or after May 26, 1965. Installations contracted for prior to May 26, 1965, shall meet the requirements of § 95.10-90.

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§ 95.10–5 Fire pumps.

(a) Vessels shall be equipped with independently driven fire pumps in accordance with Table 95.10–5(a).

TABLE 95.10–5(a)

Gross tons		Minimum number of pumps	Hose and hydrant size, inches	Nozzle orifice size, inches	Length of hose feet
Over	Not over				
.....	100	[1] 1	[1] 1½	[1] ½	[1] 50
100	1,000	1	1½	⅝	50
1,000	1,500	2	1½	⅝	50
1,500	.....	2	[2] 2½	[2] ⅞	[2] 50

[1] On vessels of 65 feet in length or less, ¾-inch hose of good commercial grade together with a commercial garden hose nozzle may be used. The pump may be hand operated and the length of hose shall be sufficient to assure coverage of all parts of the vessel.

[2] 75 feet of 1½-inch hose and ⅞-inch nozzle may be used where specified by § 95.10–10(b) for interior locations and 50 feet of 1½-inch hose may be used in exterior locations on vessels in other than ocean or coastwise service.

(b) On vessels of 1,000 gross tons and over on an international voyage, each required fire pump, while delivering water thru the fire main system at a pressure corresponding to that required by paragraph (c) of this section, shall have a minimum capacity of at least two-thirds of that required for an independent bilge pump. However, in no case shall the capacity of each fire pump be less than that otherwise required by this section.

(c) Each pump shall be capable of delivering water simultaneously from the two highest outlets at a Pitot tube pressure of approximately 50 p.s.i. Where 1½-inch hose is permitted in lieu of 2½-inch hose by footnote 2 of Table 95.10–5(a), the pump capacity shall be determined on the same basis as if 2½-inch hose had been permitted. Where ¾-inch hose is permitted by Table 95.10–5(a), the Pitot tube pressure need be only 35 p.s.i.

(d) Fire pumps shall be fitted on the discharge side with relief valves set to relieve at 25 p.s.i. in excess of the pressure necessary to maintain the requirements of paragraph (c) of this section or 125 p.s.i., whichever is greater. Relief valves may be omitted if the pumps, operating under shut-off conditions, are not capable of developing a pressure exceeding this amount.

(e) Fire pumps shall be fitted with a pressure gage on the discharge side of the pumps.

(f) Fire pumps may be used for other purposes provided at least one of the required pumps is kept available for use on the fire system at all times. Unless specifically approved by the Commandant, no branch lines shall be connected to the fire mains for other than fire and deck wash purposes. Other discharge lines shall lead from a discharge manifold near the fire pump. In no case shall a pump having connection to an oil line be used as a fire pump.

(g) The total area of the pipes leading from a pump shall not be less than the discharge area of the pump.

(h) On vessels with oil fired boilers, either main or auxiliary, or with internal combustion propulsion machinery, where 2 fire pumps are required, they shall be located in separate spaces, and the arrangement of pumps, sea connections, and sources of power shall be such as to insure that a fire in any one space will not put all of the fire pumps out of operation. However, where it is shown to the satisfaction of the Commandant that it is unreasonable or impracticable to meet this requirement due to the size or arrangement of the vessel, or for other reasons, the installation of a total flooding carbon dioxide system may be accepted as an alternate method of extinguishing any fire which would affect the powering and operation of at least one of the required fire pumps.

[CGFR 65–50, 30 FR 17001, Dec. 30, 1965, as amended by CGFR 66–33, 31 FR 15285, Dec. 6, 1966]

§ 95.10–10 Fire hydrants and hose.

(a) The size of fire hydrants, hose, and nozzles and the length of hose required shall be as noted in Table 95.10–5(a).

(b) In lieu of the 2½-inch hose and hydrants specified in Table 95.10–5(a), on vessels over 1,500 gross tons, the hydrants in interior locations may have siamese connections for 1½-inch hose. In these cases the hose shall be 75 feet in length, and only one hose will be required at each fire station; however, if all such stations can be satisfactorily served with 50-foot lengths, 50-foot hose may be used.

(c) On vessels of 1,000 gross tons and over there shall be at least one shore connection to the fire main available to each side of the vessel in an accessible location Suitable cut-out valves and check valves shall be provided. Suitable adapters also shall be provided for furnishing the vessel's shore connections with couplings mating those on the shore fire lines. Such vessels on an international voyage, shall be provided with at least one international shore connection. Facilities shall be available enabling such a connection to be used on either side of the vessel. The international shore connection shall be in accordance with specification Subpart 162.034 of Subchapter Q (Specifications) of this chapter.

(d) Fire hydrants shall be of sufficient number and so located that any part of the vessel, other than main machinery spaces, accessible to persons on board while the vessel is being navigated and all cargo holds may be reached with at least 2 streams of water from separate outlets, at least one of which shall be from a single length of hose. In main machinery spaces, all portions of such spaces shall be capable of being reached by at least 2 streams of water, each of which shall be from a single length of hose from separate outlets; however, this requirement need not apply to shaft alleys containing no assigned space for the stowage of combustibles. Fire hydrants shall be numbered as required by § 97.37-15 of this subchapter.

(e) All parts of the fire main located on exposed decks shall either be protected against freezing or be fitted with cut-out valves and drain valves so that the entire exposed parts of such piping may be shut off and drained in freezing weather. Except when closed to prevent freezing, such valves shall be sealed open.

(f) The outlet at the fire hydrant shall be limited to any position from the horizontal to the vertical pointing downward, so that the hose will lead horizontally or downward to minimize the possibility of kinking.

(g) Each fire hydrant must have at least one length of firehose, a spanner, and a hose rack or other device for stowing the hose.

(h) Fire hose shall be connected to the outlets at all times. However, on open decks where no protection is afforded to the hose in heavy weather, or where the hose may be liable to damage from the handling of cargo, the hose may be temporarily removed from the hydrant and stowed in an accessible nearby location.

(i) Except as allowed in this paragraph, each firehose on each hydrant must have a combination solid stream and water spray firehose nozzle that is approved under Subpart 162.027 of this chapter.

(1) Each ¾ inch hose on a vessel 65 feet or less in length may have a garden hose nozzle that is bronze or metal with corrosion resistance and strength equivalent to bronze.

(2) A vessel designed to only carry bulk cargoes other than liquids may have a smoothbore firehose nozzle on a hose connected to a hydrant that is on an open deck and that serves only cargo holds. This nozzle must be bronze or metal with strength and corrosion resistance equivalent to bronze and have an orifice of the size required under Table 95.10-5(a).

(i-1) In each propulsion machinery space containing an oil fired boiler, internal combustion machinery, or oil fuel unit on a vessel on an international voyage or of 1000 gross tons or more, each firehose having an approved combination nozzle must have a low-velocity water spray applicator that is approved under Subpart 162.027 of this chapter. The length of each applicator must be four feet.

(i-2) Fixed brackets, hooks, or other means for stowing an applicator must be next to each fire hydrant that has an applicator under paragraph (i-1) of this section.

(j) Firehose shall not be used for any other purpose than fire extinguishing, drills, and testing.

(k) Fire hydrants, nozzles, and other fittings shall have threads to accommodate the hose connections noted in paragraph (l) of this section.

(l) Firehose and couplings shall be as follows:

(1) Couplings shall be of brass, bronze, or other equivalent metal. For installations on vessels contracted for on or after July 1, 1954, National

Standard fire hose coupling threads shall be used for the 1½-inch and 2½-inch sizes, i.e., 9 threads per inch for 1½-inch hose and 7½ threads per inch for 2½-inch hose.

(2) Unlined hose shall not be used in the machinery spaces.

(3) Where ¾-inch hose is permitted by Table 95.10-5(a), the hose and couplings shall be of good commercial grade.

(4) Each section of fire hose used after January 1, 1980 must be lined commercial fire hose that conforms to Underwriters' Laboratories, Inc. Standard 19 or Federal Specification ZZ-H-451E. Hose that bears the label of Underwriters' Laboratories, Inc. as lined fire hose is accepted as conforming to this requirement. Each section of replacement fire hose or any section of new fire hose placed aboard a vessel after January 1, 1977 must also conform to the specification required by this paragraph.

(46 U.S.C. 390b, 481, and 391a; 49 U.S.C. 1655(b)(1); and 49 CFR 1.46(b) and 1.46(n)(4))

[CGFR 65-50, 30 FR 17001, Dec. 30, 1965, as amended by CGD 74-60 41 FR 43151, Sept. 30, 1976; CGD 76-086, 44 FR 2392, Jan. 11, 1979]

§ 95.10-15 Piping.

(a) All piping, valves, and fittings shall meet the applicable requirements of Subchapter F (Marine Engineering) of this chapter.

(b) All distribution cut-off valves shall be marked as required by § 97.37-10 of this subchapter.

(c) For vessels on an international voyage, the diameter of the fire main shall be sufficient for the effective distribution of the maximum required discharge from two fire pumps operating simultaneously. This requirement is in addition to § 95.10-5(c). The discharge of this quantity of water through hoses and nozzles at a sufficient number of adjacent hydrants shall be at a minimum Pitot tube pressure of approximately 50 pounds per square inch.

§ 95.10-90 Installations contracted for prior to May 26, 1965.

(a) Installations contracted for prior to May 26, 1965, shall meet the following requirements:

(1) Except as specifically modified by this paragraph, the requirements of §§ 95.10-5 through 95.10-15 shall be complied with insofar as the number and general type of equipment is concerned. Existing equipment, except firehose nozzles and low-velocity water spray applicators, previously approved, but not meeting the applicable requirements of §§ 95.10-5 through 95.10-15 may be continued in service so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs, alterations, and replacements may be permitted to the same standards as the original installations. However, all new installations or major replacements shall meet the applicable requirements in this subpart.

(2) All vessels contracted for prior to November 19, 1952, other than motorboats, shall be fitted with fire pumps, hoses, and nozzles in accordance with Table 95.10-90(a)(2).

TABLE 95.10-90(a)(2)

Gross tons		Minimum number of pumps	Minimum hose and hydrant size, inches	Nozzle orifice size, inches	Length of hose feet
Over	Not over				
.....	100	1	[1] 1½	[1] 5/16	[1] 50
100	1,000	1	[2] 1½	[2] ⅞	[2] 50
1,000	.....	2	[2] 1½	[2] ⅞	[2] 50

[1] On vessels of 65 feet in length or less, ¾-inch hose of good commercial grade together with a commercial garden hose nozzle may be used. The pump may be hand operated and the length of hose shall be sufficient to assure coverage of all parts of the vessel.

[2] May use 50 feet of 2½-inch hose with ⅞-inch nozzles for exterior stations. 75 feet of 1½-inch hose with ⅞-inch nozzles may be used for interior station in which case such interior stations shall have siamese connections.

(3) Vessels contracted for prior to July 1, 1935, need not meet the requirements of § 95.10-5(h), and vessels contracted for on or after July 1, 1935, but prior to November 19, 1952, may have a carbon dioxide "bilge" in lieu of "total flooding" system. However, in vessels of both categories where a conversion from coal to oil is contract-

ed for on or after November 19, 1952, the provisions of § 95.10-5(h) shall apply.

(4) The general requirements of § 95.10-5(c) through (g), § 95.10-10(d) through (i), and § 95.10-15 shall be complied with insofar as is reasonable and practicable.

(5) Before February 12, 1981, each fire hose nozzle must meet § 95.10-10(i), and each low-velocity water spray applicator must meet 95.10-10(i-1), except if the nozzle or applicator was approved under Subpart 162.027 of this chapter before May 26, 1965—

(i) The nozzle must have a high-velocity water spray tip that meets § 162.027-2(c) of this chapter, and the applicator must have a low-velocity water spray head that meets § 162.027-2(c) of this chapter; or

(ii) The fire hydrant or nozzle must have a self-cleaning strainer that meets the requirements under which the nozzle was approved.

(6) After February 11, 1981, each new or replacement nozzle must meet § 95.10-10(i), and each new or replacement low-velocity water spray applicator must meet § 95.10-10(i-1).

(46 U.S.C. 390b, 481, and 391a; 49 U.S.C. 1655(b)(1); and 49 CFR 1.46(b) and 1.46(n)(4))

[CGFR 65-50, 30 FR 17001, Dec. 30, 1965, as amended by CGD 76-086, 44 FR 2392, Jan. 11, 1979]

Subpart 95.13—Steam Smothering System, Details

§ 95.13-1 Application.

(a) In accordance with § 95.05-10, steam smothering systems are not permitted on vessels contracted for on or after January 1, 1962, nor for new installations on vessels contracted for prior to that date.

(b) Where a steam smothering system is installed, the provisions of this subpart shall apply.

(c) This does not preclude the introduction of steam into such confined spaces as boiler casings or into tanks for steaming out purposes. Such installations are not to be considered as part of any required fire extinguishing system.

§ 95.13-90 Installations contracted for prior to January 1, 1962.

(a) Installations contracted for prior to July 1, 1935, shall meet the following requirements:

(1) Existing arrangements, materials, and facilities previously approved will be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original installation.

(2) The main pipes and their branches to the cargo compartments and similar spaces shall be not less than 1½-inch pipe size and shall emanate from not more than two stations in easily accessible locations. If located on the open deck, the distribution manifolds shall be suitably protected by an enclosing cabinet or casing which shall be marked as required by § 97.37-13 of this subchapter. Each branch line shall have a valve at the manifold which shall be marked as required by § 97.37-10 of this subchapter.

(3) Branches to paint lockers and similar small spaces may be taken from the nearest steam supply line and shall be not less than ¾-inch pipe size. The valve shall be marked as required by § 97.37-10 of this subchapter.

(b) Installations contracted for on or after July 1, 1935, but prior to November 19, 1952, shall meet the following requirements:

(1) Existing arrangements, materials and facilities previously approved will be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original installation.

(2) Steam shall be available from the main or auxiliary boilers to provide at least one pound of steam per hour for each 50 cubic feet of gross volume of the largest compartment protected. Where reasonable and practicable, the

steam pressure shall be at least 100 p.s.i.

(3) The piping system shall meet the general requirements of paragraphs (c) (5) through (12) of this section insofar as is reasonable and practicable.

(4) The minimum size of distribution piping and the number of branches to the various spaces shall be as given in Table 95.13-90(b)(4) or by the following formula:

$$D = C/30{,}000 \qquad (1)$$

where:

D = Required diameter of pipe in inches.

C = Volume of compartment in cubic feet.

TABLE 95.13-90(b)(4)

Volume of compartment in cubic feet		Number of branches to compartment	Pipe size in each branch, inches
Over	Not over		
.....	30,000	1	1
30,000	46,000	1	1¼
46,000	67,000	1	1½
67,000	94,000	2	1¼
94,000	135,000	2	1½
135,000	203,000	3	1½

(5) The minimum size of the steam supply line from the boiler to the distribution manifold shall be as given by the following formula:

$$D = C/60{,}000 \qquad (2)$$

where:

D = Diameter of pipe in inches.

C = Volume of all compartments in cubic feet.

(c) Installations contracted for on or after November 19, 1952, but prior to January 1, 1962, shall meet the following requirements:

(1) Existing arrangements, materials and facilities previously approved will be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standard as the original installation.

(2) Steam shall be available from main or auxiliary boilers to provide at least 1 pound of steam per hour for each 12 cubic feet of the gross volume of the largest compartment to be protected.

(3) Although separate piping shall be led to each cargo hold and 'tween deck, for the purpose of determining the amount of steam required, a cargo compartment will be considered as the space between adjacent watertight bulkheads and from tank top or lowest deck to the deck head of the uppermost deck on which cargo may be carried. If a trunk extends beyond such deck, the trunk space shall be included. Tonnage openings shall be considered as sealed for this purpose.

(4) A steam pressure of at least 100 p.s.i. shall be available unless specifically approved otherwise.

(5) All piping, valves, and fittings shall meet the applicable requirements of Subchapter F (Marine Engineering) of this chapter.

(6) The distribution piping shall emanate from not more than three stations in easily accessible locations on the weather deck, and shall lead to the lower portion of each cargo hold, cargo 'tween deck, and other compartments protected. However, lines to paint lockers and similar small spaces may be taken from the nearest steam supply line.

(7) The distribution line to each compartment shall be fitted with a shutoff valve. The valve shall be marked as required by § 97.37-10 of this subchapter.

(8) The manifold steam supply line shall be fitted with a master valve at the manifold.

(9) Provisions shall be made for draining the manifold and distribution lines to prevent them from freezing.

(10) If located on the open deck, the distribution manifolds shall be suitably protected by an enclosing cabinet or casing. In any case, it shall be marked as required by § 97.37-13 of this subchapter.

(11) Piping shall not be led into or through spaces accessible to the persons on board while the vessel is being navigated, with the exception of machinery spaces and corridors. However, in special cases, arrangements to run piping through such spaces may be specifically approved by the Commandant, provided all joints are welded, suitable expansion bends are provided, and all piping is extra heavy.

(12) Piping shall be used for no other purposes except that it may be incorporated with the fire-detecting system, if installed, and where suitable provisions are made, it may be used for steaming out tanks.

(13) The minimum size and number of branches to the various spaces shall be as given in Table 95.13-90(c)(13). The distribution piping from the manifold to the branch lines shall have an area approximately equal to the combined areas of the branch lines served.

TABLE 95.13-90(c)(13)

Volume of space in cubic feet		Number of branches to space	Pipe size of each branch, inches
Over	Not over		
.....	500	1	¾
500	5,000	1	1
5,000	15,000	1	1¼
15,000	30,000	1	1½
30,000	60,000	2	1½
60,000	100,000	3	1½
100,000	190,000	4	1½

(14) The steam supply line from the boiler to any distribution manifold shall be of sufficient size to supply all the branch lines to the largest compartment and to all adjacent compartments.

Subpart 95.15—Carbon Dioxide Extinguishing Systems, Details

§ 95.15-1 Application.

(a) Where a carbon dioxide extinguishing system is installed, the provisions of this subpart, with the exception of § 95.15-90, shall apply to all installations contracted for on or after November 19, 1952. Installations contracted for prior to November 19, 1952, shall meet the requirements of § 95.15-90.

(b) The requirements of this subpart are based on a "high pressure system," i.e., one in which the carbon dioxide is stored in liquid form at atmospheric temperature. Details for "low pressure systems," i. e., those in which the carbon dioxide is stored in liquid form at a continuously controlled low temperature, may be specifically approved by the Commandant where it is demonstrated that a comparable degree of safety and fire extinguishing ability is achieved.

§ 95.15-5 Quantity, pipe sizes, and discharge rates.

(a) *General.* The amount of carbon dioxide required for each space shall be as determined by paragraphs (b) through (e) of this section.

(b) *Total available supply.* A separate supply of carbon dioxide need not be provided for each space protected. The total available supply shall be at least sufficient for the space requiring the greatest amount.

(c) *Cargo spaces.* (1) The number of pounds of carbon dioxide required for each space shall be equal to the gross volume of the space in cubic feet divided by 30.

(2) Although separate piping shall be led to each cargo hold and 'tween deck, for the purpose of determining the amount of carbon dioxide required, a cargo compartment will be considered as the space between watertight or firescreen bulkheads and from the tank top or lowest deck to the deck head of the uppermost space on which cargo may be carried. If a trunk extends beyond such deck, the trunk volume shall be included. Tonnage openings shall be considered as sealed for this purpose.

(3) Branch lines to the various cargo holds and 'tween decks shall not be less than ¾-inch standard pipe size.

(4) No specific discharge rate need be applied to such systems.

(d) *Enclosed ventilation systems for rotating electrical propulsion equipment.* (1) The number of pounds of carbon dioxide required for the initial charge shall be equal to the gross volume of the system divided by 10 for systems having a volume of less than 2,000 cubic feet, and divided by 12 for systems having a volume of 2,000 cubic feet or more.

(2) The piping for the initial charge shall be in accordance with Table 95.15-5(e)(4), and the discharge of the required amount shall be completed within 2 minutes.

(3) In addition to the above there shall be sufficient carbon dioxide available to permit delayed discharges of such quantity as to maintain at

least a 25 percent concentration until the equipment can be stopped. If the initial discharge is such as to achieve this concentration until the equipment is stopped, no delayed discharge need be provided.

(4) The piping for the delayed discharge shall not be less than ½-inch standard pipe, and no specific discharge rate need be applied to such systems. On small systems, this pipe may be incorporated with the initial discharge piping.

(e) *Machinery spaces, paint lockers, tanks, and similar spaces.* (1) Except as provided in paragraph (e)(3) of this section, the number of pounds of carbon dioxide required for each space shall be equal to the gross volume of the space divided by the appropriate factor noted in Table 95.15-5(e)(1). If fuel can drain from the compartment being protected to an adjacent compartment, or if the compartments are not entirely separate, the requirements for both compartments shall be used to determine the amount of carbon dioxide to be provided. The carbon dioxide shall be arranged to discharge into both such compartments simultaneously.

TABLE 95.15-5(e)(1)

Gross volume of compartment, cubic feet		Factor
Over—	Not over—	
500		15
500	1,600	16
1,600	4,500	18
4,500	50,000	20
50,000		22

(2) For the purpose of the requirements of this paragraph, the volume of the machinery space shall be taken as exclusive of the normal machinery casing unless the boiler, internal combustion machinery, or fuel oil installation extend into such space, in which case the volume shall be taken to the top of the casing or the next material reduction in casing area, whichever is lower. For installations contracted for on or after October 1, 1959, "normal machinery casing" and "material reduction in casing area" shall be defined as follows:

(i) By "normal machinery casing" shall be meant a casing the area of which is not more than 40 percent of the maximum area of the machinery space.

(ii) By "material reduction in casing area" shall be meant a reduction to at least 40 percent of the casing area.

(3) For vessels on an international voyage contracted for on or after May 26, 1965, the amount of carbon dioxide required for a space containing propulsion boilers or internal combustion propulsion machinery shall be as given by paragraphs (e) (1) and (2) of this section or by dividing the entire volume, including the casing, by a factor of 25, whichever is the larger.

(4) Branch lines to the various spaces shall be as noted in Table 95.15-5(e)(4).

TABLE 95.15-5(e)(4)

Maximum quantity of carbon dioxide required, pounds	Minimum pipe size, inches	Maximum quantity of carbon dioxide required, pounds	Minimum pipe size, inches
100	½	2,500	2½
225	¾	4,450	3
300	1	7,100	3½
600	1¼	10,450	4
1,000	1½	15,000	4½
2,450	2		

(5) Distribution piping within the space shall be proportioned from the supply line to give proper distribution to the outlets without throttling.

(6) The number, type, and location of discharge outlets shall be such as to give a uniform distribution throughout the space.

(7) The total area of all discharge outlets shall not exceed 85 percent nor be less than 35 percent of the nominal cylinder outlet area or the area of the supply pipe, whichever is smaller. The nominal cylinder outlet area in square inches shall be determined by multiplying the factor 0.0022 by the number of pounds of carbon dioxide required, except that in no case shall this outlet area be less than 0.110 square inches.

(8) The discharge of at least 85 percent of the required amount of carbon

dioxide shall be complete within 2 minutes.

(f) *Spaces specially suitable for vehicles.* (1) The number of pounds of carbon dioxide required shall be equal to the gross volume of the largest "tight" space divided by 22. In no case, however, shall the quantity be less than that required by paragraph (c)(2) of this section.

(2) The arrangement of valves and piping shall be such that the required quantity of carbon dioxide may be discharged into any "tight" space. The discharge of the required quantity of carbon dioxide shall be completed within 2 minutes.

(3) Except as noted in paragraphs (f)(1) and (2) of this section, the requirements of paragraph (e) of this section shall apply.

[CGFR 65-50, 30 FR 17001, Dec. 30, 1965, as amended by CGFR 66-33, 31 FR 15285, Dec. 6, 1966]

§ 95.15-10 Controls.

(a) Except as noted in § 95.15-20(b) all controls and valves for the operation of the system shall be outside the space protected, and shall not be located in any space that might be cut off or made inaccessible in the event of fire in any of the spaces protected.

(b) If the same cylinders are used to protect more than one hazard, a manifold with normally closed stop valves shall be used to direct the carbon dioxide into the proper space. If cylinders are used to protect only one hazard, a normally closed stop valve shall be installed between the cylinders and the hazard except for systems of the type indicated in § 95.15-5(e) which contain not more than 300 pounds of carbon dioxide.

(c) Distribution piping to the various cargo spaces shall be controlled from not more than two stations. One of the stations controlling the system for the main machinery space shall be located as convenient as practicable to one of the main escapes from the space. All control stations and the individual valves and controls shall be marked as required by §§ 97.37-10 and 97.37-13 of this subchapter.

(d) Systems of the type indicated in § 95.15-5(e) shall be actuated by one control operating the valve to the space and a separate control releasing at least the required amount of carbon dioxide. These two controls shall be located in a box or other enclosure clearly identified for the particular space. Those systems installed without a stop valve shall be operated by one control releasing at least the required amount of carbon dioxide.

(e) Where provisions are made for the simultaneous release of a given amount of carbon dioxide by operation of a remote control, provisions shall also be made for manual control at the cylinders. Where gas pressure from pilot cylinders is used as a means for releasing the remaining cylinders, not less than two pilot cylinders shall be used for systems consisting of more than two cylinders. Each of the pilot cylinders shall be capable of manual control at the cylinder, but the remaining cylinders need not be capable of individual manual control.

(f) Systems of the type indicated in § 95.15-5(e), other than systems for tanks, which are of more than 300 pounds of carbon dioxide, shall be fitted with an approved delayed discharge so arranged that the alarm will be sounded for at least 20 seconds before the carbon dioxide is released into the space. Such systems of not more than 300 pounds of carbon dioxide shall also have a similar delayed discharge, except for those systems for tanks and for spaces which have a suitable horizontal escape. This paragraph shall be applicable only to systems installed on or after July 1, 1957.

(g) All distribution valves and controls shall be of an approved type. All controls shall be suitably protected.

(h) Complete but simple instructions for the operation of the systems must be located in a conspicuous place at or near all pull boxes, stop valve controls and in the CO_2 cylinder storage room. On systems in which the CO_2 cylinders are not within the protected space, these instructions must also include a schematic diagram of the system and instructions detailing alternate methods of discharging the system should the manual release or stop valve controls fail to operate. Each control valve to branch lines must be marked to indicate the related space served.

(i) If the space or enclosure containing the carbon dioxide supply or controls is to be locked, a key to the space or enclosure shall be in a break-glass-type box conspicuously located adjacent to the opening.

(46 U.S.C. 375, 390b, 391a (49 U.S.C. 1655 (b)); 49 CFR 1.46(b) and 1.46(o)(4))

[CGFR 65-50, 30 FR 17001, Dec. 30, 1965, as amended by CGD 74-100B, 40 FR 6209, Feb. 10, 1975]

§ 95.15-15 Piping.

(a) The piping, valves, and fittings shall have a bursting pressure of not less than 6,000 pounds per square inch.

(b) All piping, in nominal sizes not over ¾ inch shall be at least Schedule 40 (standard weight) and in nominal sizes over ¾ inch, shall be at least Schedule 80 (extra heavy).

(c) All piping, valves, and fittings of ferrous materials shall be protected inside and outside against corrosion unless specifically approved otherwise by the Commandant.

(d) A pressure relief valve or equivalent set to relieve between 2,400 and 2,800 pounds per square inch shall be installed in the distributing manifold or such other location as to protect the piping in the event that all branch line shut-off valves are closed.

(e) All dead-end lines shall extend at least 2 inches beyond the last orifice and shall be closed with cap or plug.

(f) All piping, valves, and fittings shall be securely supported, and where necessary, protected against injury.

(g) Drains and dirt traps shall be fitted where necessary to prevent the accumulation of dirt or moisture. Drains and dirt traps shall be located in accessible locations where possible.

(h) Piping shall be used for no other purpose except that it may be incorporated with the fire-detecting system.

(i) Piping passing through living quarters shall not be fitted with drains or other openings within such spaces.

(j) Installation test requirements are:

(1) Upon completion of the piping installation, and before the cylinders are connected, a pressure test shall be applied as set forth in this paragraph. Only carbon dioxide or other inert gas shall be used for this test.

(2) The piping from the cylinders to the stop valves in the manifold shall be subjected to a pressure of 1,000 pounds per square inch. With no additional gas being introduced to the system, it shall be demonstrated that the leakage of the system is such as not to permit a pressure drop of more than 150 pounds per square inch per minute for a 2-minute period.

(3) The individual branch lines to the various spaces protected shall be subjected to a test similar to that described in the preceding subparagraph with the exception that the pressure used shall be 600 pounds per square inch in lieu of 1,000 pounds per square inch. For the purpose of this test, the distribution piping shall be capped within the space protected at the first joint ahead of the nozzles.

(4) In lieu of the tests prescribed in paragraphs (j) (1) through (3) of this section, small independent systems protecting spaces such as emergency generator rooms, lamp lockers, etc., may be tested by blowing out the piping with air at a pressure of at least 100 pounds per square inch.

§ 95.15-20 Carbon dioxide storage.

(a) Except as provided in paragraph (b) of this section, the cylinders shall be located outside the spaces protected, and shall not be located in any space that might be cut off or made inaccessible in the event of a fire in any of the spaces protected.

(b) Systems of the type indicated in § 95.15-5(e), consisting of not more than 300 pounds of carbon dioxide, may have the cylinders located within the space protected. If the cylinder stowage is within the space protected, the system shall be arranged in an approved manner to be automatically operated by a heat actuator within the space in addition to the regular remote and local controls.

(c) The space containing the cylinders shall be properly ventilated and designed to preclude an anticipated ambient temperature in excess of 130 degrees F.

(d) Cylinders shall be securely fastened and supported, and where necessary, protected against injury.

(e) Cylinders shall be so mounted as to be readily accessible and capable of easy removal for recharging and inspection. Provisions shall be available for weighing the cylinders.

(f) Where subject to moisture, cylinders shall be so installed as to provide a space of at least 2 inches between the flooring and the bottom of the cylinders.

(g) Cylinders shall be mounted in an upright position or inclined not more than 30 degrees from the vertical. However, cylinders which are fitted with flexible or bent siphon tubes may be inclined not more than 80 degrees from the vertical.

(h) Where check valves are not fitted on each independent cylinder discharge, plugs or caps shall be provided for closing outlets when cylinders are removed for inspection or refilling.

(i) All cylinders used for storing carbon dioxide shall be fabricated, tested, and marked in accordance with the regulations of the Interstate Commerce Commission as noted in § 147.04-1 of Subchapter N (Dangerous Cargoes) of this chapter.

§ 95.15-25 Discharge outlets.

(a) Discharge outlets shall be of an approved type.

§ 95.15-30 Alarms.

(a) Spaces which are protected by a carbon dioxide extinguishing system and are normally accessible to persons on board while the vessel is being navigated, other than paint and lamp lockers and similar small spaces, shall be fitted with an approved audible alarm in such spaces which will be automatically sounded when the carbon dioxide is admitted to the space. The alarm shall be conspicuously and centrally located and shall be marked as required by § 97.37-9 of this subchapter. For systems installed on or after July 1, 1957, alarms will be mandatory only for systems required to be fitted with a delayed discharge. Such alarms shall be so arranged as to sound during the 20 second delay period prior to the discharge of carbon dioxide into the space, and the alarm shall depend on no source of power other than the carbon dioxide.

§ 95.15-35 Enclosure openings.

(a) Where mechanical ventilation is provided for spaces other than cargo and similar spaces which are protected by a carbon dioxide extinguishing system, provisions shall be made so that the ventilation system is automatically shut down with the operation of the system to that space.

(b) Where natural ventilation is provided for spaces protected by a carbon dioxide extinguishing system, provisions shall be made for easily and effectively closing off the ventilation.

(c) Means shall be provided for closing all other openings to the space protected from outside such space. In this respect, relatively tight doors, shutters, or dampers shall be provided for openings in the lower portion of the space. The construction shall be such that openings in the upper portion of the space can be closed off either by permanently installed means or by the use of canvas or other material which is normally carried by the vessel.

§ 95.15-40 Pressure relief.

(a) Where necessary, relatively tight compartments such as refrigeration spaces, paint lockers, etc., shall be provided with suitable means for relieving excessive pressure accumulating within the compartment when the carbon dioxide is injected.

§ 95.15-90 Installations contracted for prior to November 19, 1952.

(a) Installations contracted for prior to November 19, 1952, shall meet the following requirements:

(1) Existing arrangements, materials, and facilities previously approved shall be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original installation.

(2) The details of the systems shall be in general agreement with §§ 95.15-5 through 95.15-40 insofar as is reasonable and practicable, with the exception of § 95.15-5(e) (1), (2) and (4) covering spaces other than cargo

spaces, which systems may be installed in accordance with paragraphs (a) (3) through (6) of this section.

(3) In boilerrooms, the bilges shall be protected by a system discharging principally below the floor plates. Perforated pipe may be used in lieu of discharge nozzles for such systems. The number of pounds of carbon dioxide shall be equal to the gross volume of the boilerroom taken to the top of the boilers divided by 36. In the event of an elevated boiler room which drains to the machinery space, the system shall be installed in the engineroom bilge and the gross volume shall be taken to the flat on which the boilers are installed.

(4) In machinery spaces where main propulsion internal combustion machinery is installed, the number of pounds of carbon dioxide required shall be equal to the gross volume of the space taken to the under side of the deck forming the hatch opening divided by 22.

(5) In miscellaneous spaces other than cargo or main machinery spaces the number of pounds of carbon dioxide required shall be equal to the gross volume of the space divided by 22.

(6) Branch lines to the various spaces other than cargo and similar spaces shall be as noted in Table 95.15-90(a)(6). This table is based on cylinders having discharge outlets and siphon tubes of ⅜ inch diameter.

TABLE 95.15-90(a)(6)

Number of cylinders		Nominal pipe size, inches
Over	Not over	
.....	2	½—standard.
2	4	¾—standard.
4	6	1—extra heavy.
6	12	1¼—extra heavy.
12	16	1½—extra heavy.
16	27	2—extra heavy.
27	39	2½—extra heavy.
39	60	3—extra heavy.
60	80	3½—extra heavy.
80	104	4—extra heavy.
104	165	5—extra heavy.

Subpart 95.17—Foam Extinguishing Systems, Details

§ 95.17-1 Application.

(a) Where a foam extinguishing system is installed, the provisions of this subpart, with the exception of § 95.17-90, shall apply to all installations contracted for on or after November 19, 1952. Installations contracted for prior to November 19, 1952, shall meet the requirements of § 95.17-90.

§ 95.17-5 Quantity of foam required.

(a) *Area protected.* (1) For machinery and similar spaces, the system shall be so designed and arranged as to spread a blanket of foam over the entire tank top or bilge of the space protected. The arrangement of piping shall be such as to give a uniform distribution over the entire area protected.

(2) Where an installation is made to protect an oil fired boiler installation on a flat which is open to or can drain to the lower engineroom or other space, both the flat and the lower space shall be protected simultaneously. The flat shall be fitted with suitable coamings on all openings other than deck drains to properly restrain the oil and foam at that level. Other installations of a similar nature will be considered in a like manner.

(3) Where a system is installed to protect a tank, it shall be so designed and arranged as to spread a blanket of foam over the entire liquid surface of the tank within the range of usual trim. The arrangement of piping shall be such as to give a uniform distribution over the entire area protected.

(b) *Rate of application.* (1) For spaces other than tanks, the rate of discharge to foam outlets protecting the hazard shall be at least as set forth in this paragraph.

(i) For chemical foam systems with stored "A" and "B" solutions, a total of at least 1.6 gallons per minute of the two solutions shall be discharged for each 10 square feet of area protected.

(ii) For other types of foam systems, the water rate to the dry powder generators or air foam production equip-

ment shall be at least 1.6 gallons per minute for each 10 square feet of area protected.

(2) For tanks, the rate of discharge to foam outlets protecting the hazard shall be as set forth in paragraph (b)(1) of this section, except that the value of 1 gallon per minute shall be substituted in both cases for the value of 1.6 gallons per minute.

(c) *Supply of foam producing material.* (1) There shall be provided a quantity of foam producing material sufficient to operate the equipment at the discharge rate specified in paragraph (b) of this section for a period of at least 3 minutes for spaces other than tanks, and for at least 5 minutes for tanks.

(d) *Separate supply of foam agent.* A separate supply of foam agent need not be provided for each space protected. The total available supply shall be at least sufficient for the space requiring the greatest amount.

(e) *Water supply for required pumps.* Where pumps are required, the water supply shall be from outside the space protected and shall in no way be dependent upon power from the space protected.

§ 95.17-10 Controls.

(a) The foam agent, its container, and all controls and valves for the operation of the system shall be of an approved type.

(b) The foam agent container and all controls and valves for the operation of the system shall be outside the space protected and shall not be located in such space as might be cut off or made inaccessible in the event of fire in any of the spaces protected. The control space shall be as convenient as practicable to one of the main escapes from the spaces protected, and shall be marked as required by § 97.37-13 of this subchapter. Where pumps are required, it shall not be necessary that they be started from the control space.

(c) Complete, but simple instructions for the operation of the system shall be located in a conspicuous place at or near the controls.

(d) The valves to the various spaces served shall be marked as required by § 97.37-10 of this subchapter.

§ 95.17-15 Piping.

(a) All piping, valves, and fittings shall meet the applicable requirements of Subchapter F (Marine Engineering) of this chapter.

(b) All piping, valves, and fittings of ferrous materials shall be protected inside and outside against corrosion unless specifically approved otherwise by the Commandant.

(c) All piping, valves, and fittings shall be securely supported, and where necessary, protected against injury.

(d) Drains and dirt traps shall be fitted where necessary to prevent the accumulation of dirt or moisture.

(e) Piping shall be used for no other purpose.

§ 95.17-20 Discharge outlets.

(a) Discharge outlets shall be of an approved type.

§ 95.17-25 Additional protection required.

(a) In order that any residual fires above the floor plates may be extinguished when a foam system is installed for the protection of spaces other than tanks, at least 2 fire hydrants, in addition to those required for the machinery space by Subpart 95.10, shall be installed outside of the machinery space entrance. Such hydrants shall be fitted with sufficient hose so that any part of the machinery space may be reached with at least 2 streams of water, and each hose shall be equipped with an approved combination nozzle, applicator, and self-cleaning strainer as described in § 95.10-10(i)(3).

§ 95.17-90 Installations contracted for prior to November 19, 1952.

(a) Installations contracted for prior to November 19, 1952, shall meet the following requirements:

(1) Existing arrangements, materials, and facilities previously approved shall be considered satisfactory so long as they meet the minimum requirements of this paragraph and they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs and alterations may be made to the same standards as the original installation.

(2) The details of the systems shall be in general agreement with §§ 95.17-5 through 95.17-20, with the exception of § 95.17-5(a)(2), insofar as is reasonable and practicable. A 6-inch blanket of foam in 5 minutes for tanks and 3 minutes for other spaces will be considered as meeting the requirements of § 95.17-5.

Subpart 95.50—Hand Portable Fire Extinguishers and Semiportable Fire Extinguishing Systems; Arrangements and Details

§ 95.50-1 Application.

(a) The provisions of this subpart, with the exception of § 95.50-90, shall apply to all vessels, other than unmanned barges and fishing vessels, contracted for on or after November 19, 1952. Such vessels contracted for prior to November 19, 1952, shall meet the requirements of § 95.50-90.

§ 95.50-5 Classification.

(a) Hand portable fire extinguishers and semiportable fire extinguishing systems shall be classified by a combination letter and number symbol. The letter indicating the type of fire which the unit could be expected to extinguish, and the number indicating the relative size of the unit.

(b) The types of fire will be designated as follows:

(1) "A" for fires in ordinary combustible materials where the quenching and cooling effects of quantities of water, or solutions containing large percentages of water, are of first importance.

(2) "B" for fires in flammable liquids, greases, etc., where a blanketing effect is essential.

(3) "C" for fires in electrical equipment where the use of nonconducting extinguishing agent is of first importance.

(c) The number designations for size will start with "I" for the smallest to "V" for the largest. Sizes I and II are considered hand portable fire extinguishers and sizes III, IV, and V are considered semiportable fire extinguishing systems which shall be fitted with suitable hose and nozzle or other practicable means so that all portions of the space concerned may be covered. Examples of size graduations for some of the typical hand portable and semiportable fire extinguishing systems are set forth in Table 95.50-5(c).

TABLE 95.50-5(c)

Classification		Soda-acid and water, gallons	Foam, gallons	Carbon dioxide, pounds	Dry chemical, pounds
Type	Size				
A	II	2½	2½		
B	I		1¼	4	2
B	II		2½	15	10
B	III		12	35	20
B	IV		20	50	30
B	V		40	100	50
C	I			4	2
C	II			15	10

(d) All hand portable fire extinguishers and semiportable fire extinguishing systems shall have permanently attached thereto a metallic name plate giving the name of the item, the rated capacity in gallons, quarts, or pounds, the name and address of the person or firm for whom approved, and the identifying mark of the actual manufacturer.

(e) Vaporizing-liquid type fire extinguishers containing carbon tetrachloride or chlorobromomethane or other toxic vaporizing liquids shall be removed from all vessels.

§ 95.50-10 Location.

(a) Approved hand portable fire extinguishers and semiportable fire extinguishing systems shall be installed in accordance with Table 95.50-10(a). The location of the equipment shall be to the satisfaction of the Officer in Charge, Marine Inspection. Nothing in this paragraph shall be construed as limiting the Officer in Charge, Marine Inspection, from requiring such additional equipment as he deems necessary for the proper protection of the vessel.

TABLE 95.50-10(a)—HAND PORTABLE FIRE EXTINGUISHER AND SEMIPORTABLE FIRE-EXTINGUISHING SYSTEMS

Space	Classification (see § 95.50-5)	Quantity and location
Safety areas[1]		
Wheelhouse or fire control room		None required.
Stairway and elevator enclosures		Do.
Communicating corridors	A-II	1 in each main corridor not more than 150 feet apart. (May be located in stairways.)
Lifeboat embarkation and lowering stations		None required.
Radio room		
C-I[2]	2 in vicinity of exit.[2]	
Accommodations[1]		
Staterooms, toilet spaces, public spaces, offices, lockers, isolated storerooms, and pantries, open decks, etc.		None required.
Service spaces[1]		
Galleys	B-II or C-II	1 for each 2,500 square feet or fraction thereof suitable for hazards involved.
Paint and lamp rooms	B-II	1 outside space in vicinity of exit.
Accessible baggage, mail, and specie rooms, and storerooms.	A-II	1 for each 2,500 square feet or fraction thereof located in vicinity of exits, either inside or outside the spaces.
Carpenter shop and similar spaces	A-II	1 outside the space in vicinity of exit.
Machinery spaces		
Coal-fired boilers: Bunker and boiler space		None required.
Oil-fired boilers: Spaces containing oil-fired boilers, either main or auxiliary, or their fuel-oil units.	B-II; B-V	2 required[3]; 1 required.[4]
Internal combustion or gas turbine propelling machinery spaces.	B-II	1 for each 1,000 brake horsepower, but not less than 2 nor more than 6.[5]
	B-III	1 required.[6,7]
Electric propulsive motors or generators of open type	C-II	1 for each propulsion motor or generator unit.
Enclosed ventilating systems for motors and generators of electric propelling machinery.		None required.
Auxiliary spaces:		
Internal combustion or gas turbine	B-II	1 outside the space in vicinity of exit.[7]
Electric emergency motors or generators	C-II	1 outside the space in vicinity of exit.[8]
Steam		None required.
Trunks to machinery spaces		Do.
Fuel tanks		Do.
Cargo spaces		
Inaccessible during voyage, including trunks and cargo tanks.		None required.
Accessible during voyage		Do.

[1] For motorboats, the total number of hand portable fire extinguishers required for safety areas, accommodation spaces, and service spaces shall be 1 B-II for motorboats of less than 50 gross tons and 2 B-II for motor boats of 50 gross tons and over. Two B-I hand portable fire extinguishers may be substituted for 1 B-II.

[2] For vessels on an international voyage, substitute 1 C-II in vicinity of exit.

[3] Vessels of less than 1,000 gross tons require 1.

[4] Vessels of less than 1,000 gross tons may substitute 1 B-IV.

[5] Only 1 required for motorboats.

[6] If oil burning donkey boiler fitted in space, the B-V previously required for the protection of the boiler may be substituted. Not required where a fixed carbon dioxide system is installed.

[7] Not required on vessels of less than 300 gross tons if fuel has a flashpoint higher than 110° F.

[8] Not required on vessels of less than 300 gross tons.

(b) Semiportable fire extinguishing systems shall be located in the open so as to be readily seen.

(c) If hand portable fire extinguishers are not located in the open or behind glass so that they may be readily seen, they may be placed in enclosures together with the fire hose, provided such enclosures are marked as required by § 97.37-15 of this subchapter.

(d) Hand portable fire extinguishers and their stations shall be numbered in accordance with § 97.37-23 of this subchapter.

(e) Hand portable or semiportable extinguishers, which are required on their nameplates to be protected from freezing, shall not be located where freezing temperatures may be expected.

§ 95.50-15 Spare charges.

(a) For all vessels other than motorboats spare charges shall be carried for at least 50 percent of each size and each variety, i.e. foam, soda-acid, carbon dioxide, etc., of hand portable fire extinguisher required by § 95.50-10(a). However, if the unit is of such variety that it cannot be readily recharged by the vessel's personnel, one spare unit of the same classification shall be carried in lieu of spare charges for all such units of the same size and variety.

(b) Spare charges shall be so packaged as to minimize the hazards to personnel while recharging the units. Acid shall be contained in a Crown stopper type of bottle.

§ 95.50-20 Semiportable fire extinguishers.

(a) The frame or support of each size III, IV, and V fire extinguisher required by Table 95.50-10(a) must be welded or otherwise permanently attached to a bulkhead or deck.

(b) If an approved size III, IV, or V fire extinguisher has wheels and is not required by Table 95.50-10(a), it must be securely stowed when not in use to prevent it from rolling out of control under heavy sea conditions.

(46 U.S.C. 375, 390b, 416, 481, and 526p; 49 U.S.C. 1655; 49 CFR 1.46))

[CGD 77-039, 44 FR 34133, June 14, 1979]

§ 95.50-90 Vessels contracted for prior to November 19, 1952.

(a) Vessels contracted for prior to November 19, 1952, shall meet the following requirements:

(1) The provisions of §§ 95.50-5 through 95.50-15 shall be met with the exception that existing installations in safety areas and service spaces may be maintained if in the opinion of the Officer in Charge, Marine Inspection, they are in general agreement with the degree of safety prescribed by Table 95.50-10(a). In such cases, minor modifications may be made to the same standard as the original installation: *Provided,* That in no case will a greater departure from the standards of Table 95.50-10(a) be permitted than presently exists.

Subpart 95.60—Fire Axes

§ 95.60-1 Application.

(a) The provisions of this subpart shall apply to all vessels other than motorboats.

§ 95.60-5 Number required.

(a) All vessels except barges shall carry at least the minimum number of fire axes as set forth in Table 95.60-5(a). Nothing in this paragraph shall be construed as limiting the Officer in Charge, Marine Inspection, from requiring such additional fire axes as he deems necessary for the proper protection of the vessel.

TABLE 95.60-5(a)

Gross tons		Number of axes
Over	Not over	
.....	50	1
50	200	2
200	500	4
500	1,000	6
1,000	.....	8

(b) Manned barges shall carry at least two fire axes.

§ 95.60-10 Location.

(a) Fire axes shall be distributed throughout the spaces available to persons on board so as to be most readily available in the event of emergency.

(b) If fire axes are not located in the open, or behind glass, so that they may be readily seen, they may be placed in enclosures together with the fire hose, provided such enclosures are marked as required by § 97.37-15 of this subchapter.

PART 96—VESSEL CONTROL AND MISCELLANEOUS SYSTEMS AND EQUIPMENT

Subpart 96.01—Application

Sec.

96.01-1 General.

Subpart 96.03—Marine Engineering Systems

96.03-1 Installation and details.

Subpart 96.05—Electrical Engineering and Interior Communications Systems

Sec.
96.05-1 Installation and details.

Subpart 96.07—Anchors, Chains, and Hawsers

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96.13-1 Required by Federal Communications Commission.

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Subpart 96.17—Magnetic Compass and Gyrocompass

96.17-1 When required.

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96.20-1 Vessels operating on waters governed by the 72 COLREGS.
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96.20-15 Light screens.

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Subpart 96.35—Fireman's Outfit

96.35-1 Application.
96.35-5 General.
96.35-10 Fireman's outfit.
96.35-15 Stowage.
96.35-20 Spare charges.
96.35-90 Vessels contracted for prior to May 26, 1965.

AUTHORITY: R.S. 4405, as amended, 4462, as amended, sec. 6(b)(1), 80 Stat. 938; 46 U.S.C. 375, 416, 49 U.S.C. 1655(b); 49 CFR 1.46(b) (35 FR 4959). Interpret or apply R.S. 4417, as amended, 4418, as amended, 4426, as amended, 4488, as amended, 4491, as amended, sec. 10, 35 Stat. 428, as amended, 41 Stat. 305, as amended, secs. 1, 2, 49 Stat. 1544, 1545, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 391, 392, 404, 481, 489, 395, 363, 367, 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 FR 9671, 3 CFR 1965 Supp, unless otherwise noted.

SOURCE: CGFR 65-50, 30 FR 17008, Dec. 30, 1965, unless otherwise noted.

Subpart 96.01—Application

§ 96.01-1 General.

(a) The provisions of this part shall apply to all vessels except as specifically noted in this part.

Subpart 96.03—Marine Engineering Systems

§ 96.03-1 Installation and details.

(a) The installation of all systems of a marine engineering nature, together with the details of design, construction, and installation, shall be in accordance with the requirements of Subchapter F (Marine Engineering) of this chapter. Systems of this type include the following:

Steering Systems.
Bilge and Ballast Systems.
Tank Vent and Sounding Systems.
Overboard Discharges and Shell Connections.
Pipe and Pressure Systems.
Liquefied Petroleum Gas For Cooking and Heating.

Subpart 96.05—Electrical Engineering and Interior Communications Systems

§ 96.05-1 Installation and details.

(a) The installation of all systems of an electrical engineering or interior communication nature, together with the details of design, construction, and installation, shall be in accordance with the requirements of Subchapter J (Electrical Engineering) of this chapter. Systems of this type include the following:

Ship's service generating systems.
Ship's service power distribution systems.

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Ship's lighting systems.
Electric propulsion and propulsion control systems.
Emergency lighting and power systems.
Electric lifeboat winch systems.
Electric steering gear and steering control systems.
Fire detecting and alarm systems.
Sound powered telephone and voice tube systems.
Engine order telegraph systems.
Rudder angle indicator systems.
Refrigerated spaces alarm systems.
Navigation lights systems.
Daylight signaling lights.
Miscellaneous machinery alarms and controls.
General alarm systems.

(b) Electrical equipment installed in spaces "specially suitable for vehicles" shall be in accordance with § 111.65-10 of Subchapter J (Electrical Engineering) of this chapter.

[CGFR 66-33, 31 FR 15285, Dec. 6, 1966, as amended by CGFR 68-32, 33 FR 5719, Apr. 12, 1968]

Subpart 96.07—Anchors, Chains, and Hawsers

§ 96.07-1 Application.

(a) The provisions of this subpart, with the exception of § 96.07-90, shall apply to all vessels contracted for on or after November 19, 1952. Vessels contracted for prior to November 19, 1952, shall meet the requirements of § 96.07-90.

§ 96.07-5 Ocean, coastwise, or Great Lakes service.

(a) Vessels in ocean, coastwise, or Great Lakes service, except unmanned barges, shall be fitted with anchors, chains, and hawsers in general agreement with the Standards established by the American Bureau of Shipping, see Subpart 90.35 of tl s subchapter.

[CGFR 68-32, 33 FR 5720, Apr. 12, 1968]

§ 96.07-10 Lakes, bays, and sounds, or river service.

(a) Vessels in lakes, bays, and sounds, or river service shall be fitted with such ground tackle and hawsers as deemed necessary by the Officer in Charge, Marine Inspection, depending upon the size of the vessel and the waters on which it operates.

§ 96.07-90 Vessels contracted for prior to November 19, 1952.

(a) Vessels contracted for prior to November 19, 1952, shall meet the following requirements:

(1) Installations previously accepted or approved shall be considered satisfactory for the same service so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. If the service of the vessel is changed, the suitability of the equipment will be established by the Officer in Charge, Marine Inspection.

Subpart 96.13—Radiotelegraph and Radiotelephone

§ 96.13-1 Required by Federal Communications Commission.

(a) Radiotelegraph and radiotelephone installations are required on certain vessels. Details of the application of this requirement as well as details of the installation shall be as required by the statutes and regulations under the jurisdiction of the Federal Communications Commission.

(b) All vessels on an international voyage which are required to carry a radiotelegraph or radiotelephone installation in accordance with Chapter IV of the Safety of Life at Sea Convention, 1960, must carry the International Code of Signals.

[CGFR 65-50, 30 FR 17008, Dec. 30, 1965, as amended by CGD 75-074, 42 FR 5963, Jan. 31, 1977]

Subpart 96.15—Radio Direction Finder

§ 96.15-1 When required.

(a) All mechanically propelled vessels of 1,600 gross tons and over, in ocean service or on an international voyage, shall be fitted with a radio direction finder. Details of the installation shall be as required by the statutes and regulations under the jurisdiction of the Federal Communications Commission.

[CGFR 69-127, 35 FR 9981, June 17, 1970]

Subpart 96.17—Magnetic Compass and Gyrocompass

§ 96.17-1 When required.

(a) All mechanically propelled vessels in ocean or coastwise service must be fitted with a magnetic compass.

(b) All mechanically propelled vessels of 1,600 gross tons and over in ocean or coastwise service must be fitted with a gyrocompass in addition to the magnetic compass.

(c) Each vessel must have an illuminated repeater for the gyrocompass required under paragraph (b) that is at the main steering stand unless the gyrocompass is illuminated and is at the main steering stand.

[CGD 75-074, 42 FR 5963, Jan. 31, 1977]

Subpart 96.20—Navigation Lights and Shapes, Whistles, Foghorns, Fog Bells, and Gongs

§ 96.20-1 Vessels operating on waters governed by the 72 COLREGS.

Each vessel, including a motorboat, operating on water governed by the International Regulations For Preventing Collisions at Sea, 1972 (72 COLREGS) must be equipped with navigation lights and shapes, whistles, bells, and gongs as required by those international rules.

(Convention on the International Regulations For Preventing Collisions at Sea, 1972 (as rectified); E.O. 11964 (42 FR 4327); 49 CFR 1.46(b))

[CGD 77-126, 42 FR 35797, July 11, 1977; 42 FR 51607, Sept. 29, 1977]

§ 96.20-10 Vessels operating on waters governed by the Inland, Great Lakes or Western Rivers Rules of the Road.

(a) All vessels, other than motorboats operating on waters governed by the Inland, Great Lakes or Western Rivers Rules of the Road (33 U.S.C. 154-232, 241-295, 301-355) shall be equipped with the navigation lights and shapes, whistles, foghorns, fog bells, and gongs as required by the Rules of the Road applicable to the waters on which the vessel is being navigated.

(b) Each motorboat operating on waters governed by the Inland, Great Lakes or Western Rivers Rules of the Road must be equipped with the following:

(1) Navigation lights required by Section 3 of the Motor Boat Act of April 25, 1940, as amended (46 U.S.C. 526(b)) or, in lieu thereof, the lights required by the International Regulations For Preventing Collisions at Sea, 1972 (72 COLREGS).

(2) An efficient whistle or other sound producing mechanical device as set forth in Table 96.20-10(b)(2).

TABLE 96.20-10(b)(2)

Class of motorboat	Type of device
A (less than 16 feet in length).	None required by law.
1 (16 feet and over, and less than 26 feet in length).	Mouth, hand, or power operated, capable of producing a blast of 2 seconds or more duration, and audible for at least one half mile.
2 (26 feet and over, and less than 40 feet in length).	Hand or power operated, capable of producing a blast of 2 seconds or more duration, and audible for a distance of at least 1 mile.
3 (40 feet and over, and not over 65 feet in length).	Power operated, capable of producing a blast of 2 seconds or more duration, and audible for a distance of at least 1 mile.

(3) An efficient fog bell, except that motorboats of less than 26 feet in length need not carry such a bell.

[CGFR 66-33, 31 FR 15285, Dec. 6, 1966, as amended by CGD 77-126, 42 FR 35797, July 11, 1977]

§ 96.20-15 Light screens.

(a) Light screens required by the applicable Rules of the Road for port and starboard side lights shall be painted with a glossy black paint and shall project not less than three (3) feet forward of the center of the light source.

[CGFR 68-32, 33 FR 5720, Apr. 12, 1968]

Subpart 96.25—Radar

§ 96.25-1 When required.

All mechanically propelled vessels of 1,600 gross tons and over in ocean or coastwise service must be fitted with a marine radar system for surface navigation. Facilities for plotting radar

readings must be provided on the bridge.

[CGD 75-074, 42 FR 5964, Jan. 31, 1977]

Subpart 96.27—Sounding Equipment

§ 96.27-1 When required.

(a) All mechanically propelled vessels of 500 gross tons and over in ocean or coastwise service and all mechanically propelled vessels of 500 gross tons and over in Great Lakes service and certificated for service on the River St. Lawrence eastward of the lower exit of the St. Lambert Lock at Montreal, Canada, shall be fitted with an efficient electronic deep-sea sounding apparatus and a deep-sea hand lead. All other mechanically propelled vessels of 1,500 gross tons and over in Great Lakes service shall carry a deep-sea hand lead.

[CGFR 66-33, 31 FR 15285, Dec. 6, 1966, as amended by CGD 75-074, 42 FR 5964, Jan. 31, 1977]

Subpart 96.30—Protection From Refrigerants

§ 96.30-1 Application.

(a) The provisions of this subpart, with the exception of § 96.30-90, shall apply to all vessels contracted for on or after November 19, 1952. Vessels contracted for prior to November 19, 1952, shall meet the requirements of § 96.30-90.

§ 96.30-5 General.

(a) All self-contained breathing apparatus and gas masks shall be of an approved type, constructed in accordance with Subpart 160.011 of Subchapter Q (Specifications) of this chapter.

(b) All equipment shall be maintained in an operative condition, and it shall be the responsibility of the master and chief engineer to ascertain that a sufficient number of the crew are familiar with the operation of the equipment.

§ 96.30-15 Refrigeration masks.

(a) On all vessels equipped with refrigeration, other than small unit type refrigerations of not more than 20 cubic feet capacity, a gas mask, suitable for protection against each refrigerant used, or a self-contained breathing apparatus shall be provided. The refrigeration gas masks shall be stowed convenient to, but outside of the spaces containing the refrigeration equipment.

(b) A complete recharge shall be carried for each gas mask and self-contained breathing apparatus. The spare charge shall be stowed in the same location as the equipment it is to reactivate.

§ 96.30-90 Vessels contracted for prior to November 19, 1952.

(a) Vessels contracted for prior to November 19, 1952, shall meet the following requirements:

(1) The requirements of §§ 96.30-5 through 96.30-15 shall be complied with insofar as the number of items of equipment and the method of stowage of the equipment is concerned. Existing items of equipment previously approved, but not meeting the applicable specifications set forth in § 96.30-5, may be continued in service so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection, but all new installations or replacements shall meet the applicable specifications or requirements in this subpart.

Subpart 96.35—Fireman's Outfit

§ 96.35-1 Application.

(a) The provisions of this subpart, with the exception of § 96.35-90, shall apply to all vessels on an international voyage contracted for on or after May 26, 1965. Such vessels contracted for prior to May 26, 1965, shall meet the requirements of § 96.35-90.

§ 96.35-5 General.

(a) All flame safety lamps shall be of an approved type, constructed in accordance with Subpart 160.016 of Subchapter Q (Specifications) of this chapter.

(b) All self-contained breathing apparatus shall be of an approved type, constructed in accordance with Subpart 160.011 of Subchapter Q (Specifications) of this chapter.

(c) Flashlights shall be of a type that is—

(1) Three-cell explosion-proof;

(2) Listed by Underwriter's Laboratories, Inc. and bearing its label; and

(3) Suitable for the hazardous atmosphere in which it is used.

(d) All lifelines shall be of steel or bronze wire rope. Steel wire rope shall be either inherently corrosion-resistant, or made so by galvanizing or tinning. Each end shall be fitted with a hook with keeper having throat opening which can be readily slipped over a ⅝-inch bolt. The total length of the lifeline shall be dependent upon the size and arrangement of the vessel, and more than one line may be hooked together to achieve the necessary length. No individual length of lifeline may be less than 50 feet in length. The assembled lifeline shall have a minimum breaking strength of 1,500 pounds.

(e) All equipment shall be maintained in an operative condition, and it shall be the responsibility of the master and chief engineer to ascertain that a sufficient number of the crew are familiar with the operation of the equipment.

(f) Boots and gloves shall be of rubber or other electrically nonconducting material.

(g) The helmet shall provide effective protection against impact.

(h) Protective clothing shall be of material that will protect the skin from the heat of fire and burns from scalding steam. The outer surface shall be water resistant.

[CGFR 65-50, 30 FR 17008, Dec. 30, 1965, as amended by CGFR 69-72, 34 FR 17485, Oct. 29, 1969; CGD 73-247R, 38 FR 33475, Dec. 5, 1973]

§ 96.35–10 Fireman's outfit.

(a) A fireman's outfit shall consist of one self-contained breathing apparatus with lifeline attached, one flashlight, one flame safety lamp, a rigid helmet, boots, and gloves, protective clothing, and one fire ax.

(b) Every vessel shall carry at least two firemen's outfits.

[CGFR 69-72, 34 FR 17485, Oct. 29, 1969]

§ 96.35–15 Stowage.

The fireman's outfits must be stored in widely separated, accessible locations.

[CGD 75-074, 42 FR 5964, Jan. 31, 1977]

§ 96.35–20 Spare charges.

(a) A complete recharge shall be carried for each self-contained breathing apparatus, and a complete set of spare batteries shall be carried for each flashlight. The spares shall be stowed in the same location as the equipment it is to reactivate.

§ 96.35–90 Vessels contracted for prior to May 26, 1965.

(a) Vessels contracted for prior to May 26, 1965, shall meet the following requirements:

(1) The requirements of §§ 96.35-5 through 96.35-20 shall be complied with insofar as the number of items of equipment and the method of stowage of the equipment is concerned. Existing items of equipment previously approved, but not meeting the applicable specifications set forth in § 96.35-5, may be continued in service so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection, but all new installations or replacements shall meet the applicable specifications or requirements.

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AUTHORITY: R.S. 4405, as amended, 4462, as amended; 46 U.S.C. 375, 416. Interpret or apply R.S. 4417, as amended, 4418, as amended, 4426, as amended, 4453, as amended, sec. 10, 35 Stat. 428, as amended, 41 Stat. 305, as amended, secs. 1, 2, 49 Stat. 1544, 1545, as amended, sec. 3, 68 Stat. 675, sec. 6(b)(1), 80 Stat. 938; 46 U.S.C. 391, 392, 404, 435, 395, 363, 367, 50 U.S.C. 198, 49 U.S.C. 1655(b); E.O. 11239, July 31, 1965, 30 FR 9671, 3 CFR, 1965 Supp.; 49 CFR 1.46(b) (35 FR 4959); unless otherwise noted.

SOURCE: CGFR 65-50, 30 FR 17011, Dec. 30, 1965, unless otherwise noted.

Subpart 97.01—Application

§ 97.01-1 General.

(a) The provisions of this part shall apply to all vessels except as specifically noted in this part.

Subpart 97.03—Statutory Penalties

§ 97.03-1 General.

(a) The marine safety and criminal statutes provide penalties for the violation of the applicable provisions of this subchapter, which penalties depending upon the gravity of the violation, are as follows:

(1) Assessment and collection of civil monetary penalty.

(2) Criminal prosecution where no loss of life results.

(3) Criminal prosecution for manslaughter where loss of life results from violation of statute or regulation or from misconduct, negligence, or inattention to duty.

(4) Libel against vessel.

(b) In addition to the foregoing, any licensed or certificated personnel committing an act of misbehavior, negligence, unskillfulness, endangering life, violation of marine safety statutes or regulations or requirements thereunder, and incompetency shall be subject to proceedings under the provisions of 46 U.S.C. 239 and regulations thereunder (Part 5 of this chapter) with respect to suspension or revocation of license or certificate.

Subpart 97.05—Notice to Mariners and Aids to Navigation

§ 97.05-1 Duty of officers.

(a) Licensed deck officers are required to acquaint themselves with the latest information published by the Coast Guard and the U.S. Navy regarding aids to navigation. Neglect to do so is evidence of neglect of duty. It is desirable that vessels other than motorboats shall have available in the pilothouse for convenient reference at all times a file of the applicable Notice to Mariners.

(b) Weekly Notices to Mariners (Great Lakes Edition), published by the Commander, 9th Coast Guard District, contain announcements and information on changes in aids to navigation and other marine information affecting the safety of navigation on the Great Lakes. These notices may be obtained free of charge, by making application to Commander, 9th Coast Guard District.

(c) Weekly Notices to Mariners (world-wide coverage) are prepared jointly by the U.S. Naval Oceanographic Office, the U.S. Coast and Geodetic Survey and the U.S. Coast Guard. They include changes in aids to navigation in assembled form for the 1st, 3d, 5th, 7th, Greater Antilles Section 8th, 11th, 12th, 13th, 14th, and 17th Coast Guard Districts. Foreign marine information is also included in these notices. These notices are available without charge from the U.S. Naval Oceanographic Office, Washington, D.C. 20390, Branch Oceanographic Offices, U.S. Collector of Customs of the major seaports in the United States and are also on file in the U.S. Consulates where they may be inspected.

[CGFR 66-33, 31 FR 15286, Dec. 6, 1966, as amended by CGFR 68-32, 33 FR 5720, Apr. 12, 1968; CGFR 69-116, 35 FR 6861, Apr. 30, 1970]

§ 97.05-5 Charts and nautical publications.

As appropriate for the intended voyage, all vessels except barges, vessels operating exclusively on rivers, and motorboats other than those certificated for ocean or coastwise route, must carry adequate and up-to-date—

(a) Charts;

(b) Sailing directions;

(c) Coast pilots;

(d) Light lists;

(e) Notices to mariners;

(f) Tide tables;

(g) Current tables; and

(h) All other nautical publications necessary.[1]

[CGD 75-074, 42 FR 5964, Jan. 31, 1977]

[1] For United States vessels in or on the navigable waters of the United States, see 33 CFR 164.33.

Subpart 97.07—Notice of Casualty and Voyage Records

AUTHORITY: Interpret or apply R.S. 4450, as amended, 4453, as amended, secs. 13, 17, 54 Stat. 165, 166, as amended, sec. 10, 18 Stat. 128, as amended; 46 U.S.C. 239, 435, 526l(c), 526p, 33 U.S.C. 361. Treasury Department Order 167-32, Sept. 23, 1958, 23 FR 7605.

§ 97.07-1 Notice of casualty.

(a) The owner, agent, master or person in charge of a vessel involved in a marine casualty shall give notice as soon as possible to the nearest Coast Guard Marine Safety or Marine Inspection Office whenever the casualty involves any of the following:

(1) All accidental groundings and any intentional grounding which also meets any of the other reporting criteria or creates a hazard to navigation, the environment, or the safety of the vessel;

(2) Loss of main propulsion or primary steering, or any associated component or control system, the loss of which causes a reduction of the maneuvering capabilities of the vessel. Loss means that systems, component parts, sub-systems, or control systems do not perform the specified or required function;

(3) An occurrence materially and adversely affecting the vessel's seaworthiness or fitness for service or route, including but not limited to fire, flooding, or failure or damage to fixed fire extinguishing systems, lifesaving equipment, auxiliary power generating equipment, or bilge pumping systems;

(4) Loss of life;

(5) Injury causing a person to remain incapacitated for a period in excess of 72 hours;

(6) An occurrence not meeting any of the above criteria but resulting in damage to property in excess of $25,000.00. Damage includes the cost necessary to restore the property to the service condition which existed prior to the casualty, including the cost of salvage, gas freeing and dry dock. It does not include such items as demurrage.

(b) The master of any nuclear vessel shall immediately inform the Commandant in the event of any accident or casualty to the nuclear vessel which may lead to an environmental hazard. The master shall also immediately inform the competent governmental authority of the country in whose waters the vessel may be in, or whose waters the vessel approaches in a damaged condition.

(Sec. 10, 18 Stat 128 (33 U.S.C. 361); R.S. 4450, as amended (46 U.S.C. 239); R.S. 4405 (46 U.S.C. 375); 80 Stat. 938 (49 U.S.C. 1655(b)(1); 49 CFR 1.46(b)))

[CGFR 65-50, 30 FR 17011, Dec. 30, 1965, as amended by CGD 76-170, 45 FR 77443, Nov. 24, 1980]

§ 97.07-5 Information required.

The notice required by § 97.07 -1 must include the name and official number of the vessel involved, the name of the vessel's owner or agent, the nature and circumstances of the casualty, the locality in which it occurred, the nature and extent of injury to persons, and the damage to property.

(Sec. 10, 18 Stat 128 (33 U.S.C. 361); R.S. 4450, as amended (46 U.S.C. 239); R.S. 4405 (46 U.S.C. 375); 80 Stat. 938 (49 U.S.C. 1655(b)(1); 49 CFR 1.46(b)))

[CGD 76-170, 45 FR 77443, Nov. 24, 1980]

§ 97.07-10 Written report.

(a) In addition to the notice required by § 97.07-1, the person in charge of the vessel shall, as soon as possible, report in writing and in person to the Officer in Charge, Marine Inspection, at the port in which the casualty occurred or nearest the port of first arrival. However, if from a distance it may be inconvenient to report in person, it may be done in writing only. The written report required for personal accident shall be made on Form CG-925E and submitted for each individual injured and each loss of life. For all other vessel casualties the written report shall be made on Form CG-2692.

(b) If filed without delay, the Form CG-924E or CG-2692 may also provide the notice required by § 97.07-1.

§ 97.07-15 Retention of records.

(a) The owner, agent, master, or other person in charge of any vessel involved in a marine casualty shall

retain such voyage records of the vessel as are maintained by the vessel, such as both rough and smooth deck and engineroom logs, bell books, navigation charts, navigation work books, compass deviation cards, gyrocompass records, storage plans, record of draft, aids to mariners, radiograms sent and received, the radio log and crew and passenger lists. The owner, agent, master, or other officer in charge, shall make these records available to a duly authorized Coast Guard officer or employee for examination upon request.

§ 97.07-20 Aids to navigation.

(a) Whenever a vessel collides with a lightship, buoy, or other aid to navigation under the jurisdiction of the Coast Guard, or is connected with any such collision, it shall be the duty of the person in charge of such vessel to report the accident to the nearest Officer in Charge, Marine Inspection. No report on Form CG-2692 is required unless any of the results listed in § 97.07-1(a) occur.

§ 97.07-25 Reports when state of war exists.

(a) During the period when a state of war exists between the United States and any foreign nation, communications in regard to casualties or accidents shall be handled with caution and the reports shall not be made by radio or by telegram.

Subpart 97.10—Persons Allowed in Pilothouse and on Navigation Bridge

§ 97.10-1 Application.

(a) The provisions of this subpart shall apply to all vessels carrying passengers.

§ 97.10-5 Persons excluded.

(a) Masters and pilots shall exclude from the pilothouse and navigator's bridge while under way, all persons not connected with the navigation of the vessel. However, inspectors of the Coast Guard, licensed officers of vessels, persons regularly engaged in learning the profession of pilot, officers of the Coast Guard, U.S. Navy, U.S. Coast and Geodetic Survey, and the Engineer Department of the U.S. Army, or Maritime Administration personnel, may be allowed in the pilothouse or upon the navigator's bridge upon the responsibility of the officer in charge.

Subpart 97.12—Cargo Stowage

§ 97.12-1 Bulk ores and similar cargoes.

(a) The owners or operators of general cargo vessels which carry bulk cargoes such as ore, ore concentrates, and similar cargoes shall furnish to the masters of such vessels guidance information pertaining to the safe stowage of such cargoes.

§ 97.12-5 Manual.

(a) The manual on the "Stowage of Bulk Cargoes Such as Ore, Ore Concentrates, and Similar Cargoes when carried in General Cargo Vessels," 1966,[1] printed and distributed by the National Cargo Bureau, Inc., 99 John Street, New York, N.Y., 10038, is endorsed and recognized by the Coast Guard for use in compliance with the requirements of § 97.12-1(a).

[CGFR 65-50, 30 FR 17011, Dec. 30, 1965, as amended by CGFR 66-33, 31 FR 15286, Dec. 6, 1966]

Subpart 97.13—Station Bills

AUTHORITY: Interpret or apply R.S. 4488, as amended; 46 U.S.C. 481.

§ 97.13-1 Application.

(a) The provisions of this subpart shall apply to all vessels of over 500 gross tons except barges.

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[1] Copies of this manual are on file at Coast Guard Headquarters and with the various Coast Guard District Commanders for reference purposes.

§ 97.13-5 Master's responsibility.

(a) A station bill (muster list) shall be prepared by the master of the vessel who shall be responsible to sign such station bill and to ascertain that it is duly posted in conspicuous locations in the vessel, particularly in the crew quarters, before the vessel sails.

§ 97.13-10 Duties of crew.

(a) The station bill shall set forth the special duties and duty station of each member of the crew for the various emergencies. The duties shall, as far as possible, be comparable with the regular work of the individual. The duties shall in general include the following and in addition, such other duties shall be assigned as are necessary in the case of the particular vessel for the proper handling of the particular emergency:

(1) The closing of airports, watertight doors, scuppers, sanitary and other discharges which lead through the vessel's hull below the margin line, etc., the stopping of fans and ventilating systems, and the operation of all safety equipment.

(2) The preparation and launching of lifeboats and liferafts.

(3) The extinction of fire.

(4) The muster of passengers, if carried, which shall in general be assigned to the stewards department, and shall include the following:

(i) Warning the passengers.

(ii) Seeing that the passengers are dressed and have put on their life preservers or exposure suits correctly.

(iii) Assembling the passengers and directing them to the appointed stations.

(iv) Keeping order in the passageways and stairways and generally controlling the movement of the passengers.

(v) Seeing that a supply of blankets is taken to the lifeboats.

(5) The custody of the portable radio apparatus required by Subpart 94.55 of this subchapter.

[CGFR 65-50, 30 FR 17011, Dec. 30, 1965, as amended by CGD 76-003a, 45 FR 24478, Apr. 10, 1980; 45 FR 29588, May 5, 1980]

§ 97.13-15 Emergency signals.

(a) The station bill shall set forth the various signals to be used for the calling of the crew to their stations and for giving instructions while at their stations. These signals shall be as set forth in this section.

(b) (1) The fire alarm signal shall be a continuous blast of the whistle for a period of not less than 10 seconds supplemented by the continuous ringing of the general alarm bells for not less than 10 seconds.

(2) For dismissal from fire alarm stations, the general alarm shall be sounded three times supplemented by three short blasts of the whistle.

(c) (1) The signal for boat stations or boat drill shall be a succession of more than six short blasts followed by one long blast of the whistle supplemented by a comparable signal on the general alarm bells.

(2) Where whistle signals are used for handling the lifeboats, they shall be as follows:

(i) To lower lifeboats, one short blast.

(ii) To stop lowering the lifeboats, two short blasts.

(3) For dismissal from boat stations, there shall be three short blasts of the whistle.

(d) In the case of river vessels, the ship's bell may be used in lieu of the whistle signals stipulated in this section.

(e) The master of any vessel may establish such other emergency signals, in addition to the above, as will provide that all officers, crew, and passengers will have positive and certain notice of the existing emergency.

§ 97.13-20 Master to instruct crew.

(a) The master shall conduct such drills and give such instructions as are necessary to insure that all hands are

familiar with their duties as specified in the station bill.

Subpart 97.14—Manning of Lifeboats and Liferafts

AUTHORITY: Interpret or apply R.S. 4488, as amended; 46 U.S.C. 481.

§ 97.14-1 Application.

(a) The provisions of this subpart shall apply to all vessels equipped with lifeboats and/or liferafts, except unmanned barges.

§ 97.14-5 Person in command of lifeboat or liferaft.

(a) For vessels in ocean service, a licensed deck officer, an able seaman, or a certificated lifeboatman shall be placed in command of each lifeboat or liferaft. When two or more certificated lifeboatmen are required by Table 97.14-10(a), a second in command shall also be appointed which person shall be either a licensed deck officer, an able seaman, or a certificated lifeboatman.

(b) For vessels in services other than ocean service, the master shall appoint a person in command of each lifeboat and each liferaft. Except for vessels in river service, this person in command shall be either a licensed deck officer, an able seaman, or a certificated lifeboatman.

(c) The person in charge of each lifeboat or liferaft shall have a list of its crew, and shall see that the persons under his orders are acquainted with their several duties.

[CGFR 65-50, 30 FR 17011, Dec. 30, 1965, as amended by CGFR 68-65, 33 FR 19987, Dec. 28, 1968]

§ 97.14-10 Certificated lifeboatmen.

(a) Except for vessels in river service, there shall be for each lifeboat and each liferaft a number of certificated lifeboatmen equal to that specified in Table 97.14-10(a): *Provided,* That vessels required to carry sufficient lifeboats on each side to accommodate all persons on board need only carry the certificated lifeboatmen required for the manning of the lifeboats on one side.

TABLE 97.14-10(a)

Prescribed complement of lifeboat or liferaft		Minimum number of lifeboatmen[1]	
Over—	Not over—	Ocean service	All services other than ocean[2]
.....	25	2	1
25	40	2	2
40	60	3	3
60	85	4	4
85	110	5	5
110	.....	6	6

[1] Only one certificated lifeboatman required for each inflatable liferaft.
[2] Certificated lifeboatmen are not required of vessels in river service.

(b) The allocation of the certificated lifeboatmen to each lifeboat and each liferaft shall be at the discretion of the master according to the circumstances.

[CGFR 65-50, 30 FR 17011, Dec. 30, 1965, as amended by CGFR 68-65, 33 FR 19987, Dec. 28, 1968]

§ 97.14-15 Motor-propelled lifeboat.

(a) The master shall assign to each motor-propelled lifeboat a man capable of working the motor.

§ 97.14-20 Lifeboat carrying a radiotelegraph and/or searchlight.

(a) The master shall assign to each lifeboat carrying a radiotelegraph and/or searchlight a man capable of operating such equipment.

(46 U.S.C. 375, 416)

[CGFR 68-32, 33 FR 5720, Apr. 12, 1968]

Subpart 97.15—Tests, Drills, and Inspections

AUTHORITY: Interpret or apply R.S. 4488, as amended; 46 U.S.C. 481.

§ 97.15-1 Application.

(a) Except as specifically noted, the provisions of this subpart shall apply to all vessels other than motorboats, and to all motorboats on an international voyage. Motorboats not on an international voyage shall meet the general intent of this subpart insofar as is reasonable and practicable with the exception that the logging of information is not required.

§ 97.15-3 Steering gear, whistle, and means of communication.

(a) On all vessels making a voyage of more than 48 hours' duration, the entire steering gear, the whistle, and the means of communication between the bridge or pilothouse and the engineroom shall be examined and tested by an officer of the vessel within a period of not more than 12 hours prior to departure. On all other vessels similar examinations and tests shall be made at least once in every week.

(b) The date of the test and the condition of the equipment shall be noted in the official logbook.

§ 97.15-5 Drafts and load line markings.

(a) The master of every vessel on an ocean, coastwise, or Great Lakes voyage shall enter the drafts of the vessel, forward and aft, in the official logbook when leaving port.

(b) On vessels subject to the requirements of Subchapter E (Load Lines) of this chapter at the time of departure from port on an ocean, coastwise, or Great Lakes voyage, the master shall insert in the official logbook a statement of the position of the load line mark, port and starboard, in relation to the surface of the water in which the vessel is then floating.

(1) When an allowance for draft is made for density of the water in which the vessel is floating, this density is to be noted in the official logbook.

§ 97.15-10 Sanitation.

(a) It shall be the duty of the master and chief engineer to see that the vessel, and, in particular, the quarters are in a clean and sanitary condition. The chief engineer shall be responsible only for the sanitary condition of the engineering department.

§ 97.15-15 Examination of boilers and machinery.

(a) It shall be the duty of the chief engineer when he assumes charge of the boilers and machinery of a vessel to examine them thoroughly. If any parts thereof are in bad condition, or if the safety-valve seals are broken, the fact shall immediately be reported to the master, owner or agent, and the Officer in Charge, Marine Inspection.

§ 97.15-20 Hatches and other openings.

(a) (1) With the exception stated in paragraph (a)(2) of this section, it shall be the responsibility of the master to assure himself that all exposed cargo hatches and other openings in the hull of his vessel are closed, made properly watertight by the use of tarpaulins, gaskets or similar devices, and in all respects properly secured for sea before leaving protected waters.

(2) A vessel engaged in a voyage exclusively on Great Lakes waters and having 6 feet or more of freeboard, measured vertically from the water's edge at the lowest point of sheer to the top of deck at the ship's side, may, at the master's discretion, omit tarpaulins on the ship's hatches from 16 May through 15 September (both dates inclusive). This exemption does not relieve the master of any responsibility for the securing and protection of his hatches during the interval of exemption and, in case of indications of bad weather or other threatening conditions, he shall not leave protected waters until the exposed cargo hatches and other openings in the hull of his vessel are properly covered, secured and protected.

(b) The openings to which this section applies are as follows:

(1) Exposed cargo hatches.

(2) Gangway, cargo and coaling ports fitted below the freeboard deck.

(3) Port lights that are not accessible during navigation including the dead lights for such port lights.

(c) Vessels which, by their design, do not require cargo hatch closing devices and to which § 45.01-20 of Subchapter E (Load Lines) of this chapter applies need not comply with the requirements of this section as to exposed cargo hatches.

(d) The master at his discretion may permit hatches or other openings to remain uncovered or open, or to be uncovered or opened for reasonable purposes such as ship's maintenance while the vessel is being navigated: *Provided,* That in his opinion existing conditions warrant such action.

(e) In the event the master employs the discretionary provisions of this section after leaving port he shall

cause appropriate entries to be made in the official log or equivalent thereof setting forth the time of uncovering, opening, closing or covering of the hatches or other openings to which this section applies and the circumstances warranting the action taken.

(f) The discretionary provisions of this section shall not relieve the master of his responsibility for the safety of his vessel, her crew or cargo.

§ 97.15-25 Line-throwing appliances.

(a) On vessels fitted with a line-throwing appliance, it shall be the duty of the master to drill his crew in the use of such appliance, and require it to be fired at least once in every 3 months. Each drill shall be recorded in the vessel's official logbook. The service line shall not be used for drill purpose. The drill shall be conducted as follows:

(1) For impulse-projected rocket type, by actually firing the rocket with any flexible line of proper size and length, suitably faked or laid out.

(2) For shoulder gun type, by actually firing, using the regular cartridge and projectile with any flexible line of proper size and length, suitably faked or laid out.

(3) For Lyle gun type, by actually firing, using 2½ ounces of powder, the regular service projectile with any flexible line of proper size and length suitably faked or laid out.

§ 97.15-30 Emergency lighting and power systems.

(a) Where fitted, it shall be the duty of the master to see that the emergency lighting and power systems are operated and inspected at least once in each week that the vessel is navigated to be assured that the system is in proper operating condition.

(b) Internal combustion engine driven emergency generators shall be operated under load for at least 2 hours, at least once in each month that the vessel is navigated.

(c) Storage batteries for emergency lighting and power systems shall be tested at least once each 6-month period that the vessel is navigated to demonstrate the ability of the storage battery to supply the emergency loads for the period of time specified in Table 112.05-5(a) of this chapter.

(d) The date of the tests and the condition and performance of the apparatus shall be noted in the official log book.

[CGFR 65-50, 30 FR 17014, Dec. 30, 1965, as amended by CGFR 70-143, 35 FR 19906, Dec. 30, 1970; 36 FR 5606, Mar. 25, 1971]

§ 97.15-35 Fire and boat drills.

(a) The master shall be responsible for conducting a fire and boat drill at least once in every week. The scheduling of such drills shall be at the discretion of the Master except that at least one fire and boat drill shall be held within 24 hours of leaving a port if more than 25 percent of the crew have been replaced at that port.

(b) The fire and boat drill shall be conducted as if an actual emergency existed. All hands should report to their respective stations and be prepared to perform the duties specified in the station bill.

(1) Fire pumps shall be started and a sufficient number of outlets used to ascertain that the system is in proper working order.

(2) All rescue and safety equipment shall be brought from the emergency equipment lockers and the persons designated shall demonstrate their ability to use the equipment.

(3) All watertight doors which are in use while the vessel is under way shall be operated.

(4) Weather permitting, lifeboat covers and strongbacks shall be removed, plugs or caps put in place, boat ladders secured in position, painters led forward and tended, and other lifesaving equipment prepared for use. The motor and hand-propelling gear of each lifeboat, where fitted, shall be operated for at least 5 minutes.

(5) The passengers, if carried, shall be encouraged to fully participate in these drills and shall be instructed in the use of the life preservers.

(6) In port, every lifeboat shall be swung out, if practicable, and the unobstructed lifeboats shall be lowered to the water and the crew exercised in the use of the oars and other means of propulsion if provided for the lifeboat. Although all lifeboats may not be used

in a particular drill, care shall be taken that all lifeboats are given occasional use to ascertain that all lowering equipment is in proper order and the crew properly trained. The Master shall be responsible that each lifeboat is lowered to the water at least once in each 3 months.

(7) When the vessel is under way, and weather permitting, all lifeboats shall be swung out to ascertain that the gear is in proper order.

(8) The person in charge of each lifeboat and liferaft shall have a list of its crew and shall see that the men under his command are acquainted with their duties.

(9) Lifeboat equipment shall be examined at least once a month to insure that it is complete.

(c) An entry shall be made in the vessel's official logbook relative to each fire and boat drill setting forth the date and hour, length of time of the drill, numbers on the lifeboats swung out and numbers on those lowered, the length of time that motor and hand-propelled lifeboats are operated, the number of lengths of hose used, together with a statement as to the condition of all fire and lifesaving equipment, watertight door mechanisms, valves, etc. An entry shall also be made to report the monthly examination of the lifeboat equipment. If in any week the required fire and boat drills are not held or only partial drills are held, an entry shall be made stating the circumstances and extent of the drills held.

(d) A copy of these requirements, Form CG-809, shall be framed under glass and posted in a conspicuous place about the vessel. This form may be obtained from the Officer in Charge, Marine Inspection.

§ 97.15-37 Exposure suits.

The master of a vessel when operating on the Great Lakes shall ensure that:

(a) Each crew member wears an exposure suit in at least one fire and boat drill per month;

(b) In each fire and boat drill, each passenger on board is instructed in the use of exposure suits; and

(c) Each passenger is told at the beginning of the voyage where exposure suits are stowed on board and is encouraged to read the instructions for donning and use of the exposure suits.

[CGD 76-003a, 45 FR 24478, Apr. 10, 1980; 45 FR 29588, May 5, 1980]

§ 97.15-40 Electric power operated lifeboat winches.

(a) It shall be the duty of the master to see that all lifeboat winch control apparatus, including motor controllers, emergency switches, master switches, and limit switches, are examined at least once in each 3 months. The examination shall include the removal of drain plugs and/or the opening of drain valves in such appliances to assure that the enclosures are free of water.

(b) The date of the examination required by this section and the condition of the equipment shall be noted in the official logbook.

§ 97.15-45 Lifeboats, rescue boats, liferafts, lifefloats, and buoyant apparatus.

(a) (1) It shall be the duty of the master or person in charge to see that the lifeboats, rescue boats, liferafts, lifefloats, and buoyant apparatus are properly maintained at all times, and that all equipment for his vessel required by the regulations in this subchapter is provided, maintained, and replaced as indicated.

(2) The master shall assign to one or more officers the duty of seeing that the lifeboats, rescue boats, liferafts, lifefloats, and buoyant apparatus are at all times ready for immediate use.

(3) The decks on which lifeboats, rescue boats, liferafts, lifefloats, and buoyant apparatus are stowed shall be kept clear of cargo or any other obstructions which would interfere with the immediate launching of such equipment.

(b) Where motor-propelled lifeboats are carried, the motor of each lifeboat shall be operated in the ahead and astern position for a period of not less than 5 minutes at least once in each week.

(c) All lifeboats, rescue boats and rigid type liferafts shall be stripped, cleaned, and thoroughly overhauled at least once in every year. When lifeboats are removed from a vessel for this purpose on a rotational basis, the installation test prescribed by Subpart 94.35 of this subchapter need not be made.

(d) The fuel tanks of all motor-propelled lifeboats shall be emptied and the fuel changed at least once in every year.

(e) Vessels in ocean or coastwise service having a sufficient number of lifeboats on each side to accommodate all persons on board may care for their lifeboats at sea: *Provided,* That a number of lifeboats sufficient to accommodate all persons on board are fully equipped and ready for use at all times.

(f) Inflatable liferafts shall be serviced at an approved service facility every 12 months or not later than the next inspection for certification provided the time since date of last servicing does not exceed 15 months. Except in emergencies no servicing should be done aboard vessels.

§ 97.15-50 Radio apparatus for lifeboats.

(a) It shall be the duty of the master to require that all batteries for all fixed and portable radio apparatus for lifeboats are brought up to full charge weekly if the batteries are of a type which require recharging.

(b) In any case, the transmitter shall be tested weekly using a suitable artificial aerial.

§ 97.15-55 Requirements for fuel oil.

(a) It shall be the duty of the chief engineer to cause an entry in the log to be made of each supply of fuel oil received on board, stating the quantity received, the name of the vendor, the name of the oil producer, and the flashpoint (Pensky-Martens Closed Cup Method, ASTM-D93) for which it is certified by the producer.

(b) It shall be the further duty of the chief engineer to cause to be drawn and sealed and suitably labeled at the time the supply is received on board, a half-pint sample of each lot of fuel oil. These samples shall be preserved until the particular supply of oil is exhausted.

[CGFR 65-50, 30 FR 17011, Dec. 30, 1965, as amended by CGFR 68-82, 33 FR 18901, Dec. 18, 1968]

§ 97.15-60 Firefighting equipment, general.

(a) It shall be the duty of the owner, master, or person in charge to see that the vessel's firefighting equipment is at all times ready for use and that all such equipment required by the regulations in this subchapter is provided, maintained, and replaced as indicated.

(b) It shall be the duty of the owner, master, or person in charge to require and have performed at least once in every twelve months the tests and inspections of all hand portable fire extinguishers, semiportable fire extinguishing systems, and fixed fire extinguishing systems on board, as described in Tables 91.25-20(a)(1) and 91.25-20(a)(2) in § 91.25-20 of this subchapter. The owner, master, or person in charge shall keep records of such tests and inspections showing the dates when performed, the number and/or other identification of each unit tested and inspected, and the name(s) of the person(s) and/or company conducting the tests and inspections. Such records shall be made available to the inspector upon request and shall be kept for the period of validity of the vessel's current certificate of inspection. Where practicable these records should be kept in or with the vessel's log book. The conduct of these tests and inspections does not relieve the owner, master, or person in charge of his responsibility to maintain this firefighting equipment in proper condition at all times.

§ 97.15-65 Emergency position indicating radiobeacon (EPIRB).

The master shall ensure that—

(a) The EPIRB required in § 94.60-1 of this subchapter is tested monthly, using the integrated test circuit and output indicator, to determine that it is operative; and

(b) The EPIRB's battery is replaced after the EPIRB is used and before the date required by FCC regulations

in 47 CFR Part 83 to be marked on the outside of the EPIRB.

[CGD 73-24R, 39 FR 10139, Mar. 18, 1974]

§ 97.15-70 Personal flotation device lights.

(a) Each personal flotation device light that has a non-replaceable power source must be replaced on or before the expiration date of the power source.

(b) Each replaceable power source for a personal flotation device light must be replaced on or before its expiration date and the light must be replaced when it is no longer serviceable.

(46 U.S.C. 375, 390b, 391a, 416, 481, 526p, 1454, and 1488; 49 U.S.C. 1655(b); 50 U.S.C. 198, and 49 CFR 1.46)

[CGD 76-028, 44 FR 38784, July 2, 1979]

Subpart 97.16—Auto Pilot

§ 97.16-1 Use of auto pilot.

Except as provided in 33 CFR 164.15, when the automatic pilot is used in—

(a) Areas of high traffic density;

(b) Conditions of restricted visibility; and

(c) All other hazardous navigational situations, the master shall ensure that—

(1) It is possible to immediately establish manual control of the ship's steering;

(2) A competent person is ready at all times to take over steering control;

(3) The changeover from automatic to manual steering and vice versa is made by, or under, the supervision of the officer of the watch.

[CGD 75-074, 42 FR 5964, Jan. 31, 1977]

Subpart 97.17—Steering Orders

§ 97.17-1 Method of communicating.

(a) All steering orders shall be given and communicated in terms of "right rudder" where it is intended that the top of the wheel, the rudder blade, and the head of the ship should go to the right, and "left rudder" where it is intended that the top of the wheel, the rudder blade, and the head of the ship should go to the left.

Subpart 97.19—Maneuvering Characteristics

§ 97.19-1 Data required.

For each ocean and coastwise vessel of 1,600 gross tons or over, the following apply:

(a) The following maneuvering information must be prominently displayed in the pilothouse on a fact sheet:

(1) For full and half speed, a turning circle diagram to port and starboard that shows the time and the distance of advance and transfer required to alter the course 90 degrees with maximum rudder angle and constant power settings.

(2) The time and distance to stop the vessel from full and half speed while maintaining approximately the initial heading with minimum application of rudder.

(3) For each vessel with a fixed propeller, a table of shaft revolutions per minute for a representative range of speeds.

(4) For each vessel with a controllable pitch propeller a table of control settings or a representative range of speeds.

(5) For each vessel that is fitted with an auxiliary device to assist in maneuvering, such as a bow thruster, a table of vessel speeds at which the auxiliary device is effective in maneuvering the vessel.

(b) The maneuvering information must be provided in the normal load and normal light condition with normal trim for a particular condition of loading assuming the following—

(1) Calm weather—wind 10 knots or less, calm sea;

(2) No current;

(3) Deep water conditions—water depth twice the vessel's draft or greater; and

(4) Clean hull.

(c) At the bottom of the fact sheet, the following statement must appear:

WARNING

The response of the (name of the vessel) may be different from those listed above if any of the following conditions, upon which the maneuvering information is based, are varied:

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(1) Calm weather—wind 10 knots or less, calm sea;
(2) No current;
(3) Water depth twice the vessel's draft or greater;
(4) Clean hull; and
(5) Intermediate drafts or unusual trim.

(d) The information on the fact sheet must be:
(1) Verified six months after the vessel is placed in service; or
(2) Modified six months after the vessel is placed into service and verified within three months thereafter.

(e) The information that appears on the fact sheet may be obtained from:
(1) Trial trip observations;
(2) Model tests;
(3) Analytical calculations;
(4) Simulations;
(5) Information established from another vessel of similar hull form, power, rudder and propeller; or
(6) Any combination of the above.

The accuracy of the information in the fact sheet required is that attainable by ordinary shipboard navigation equipment.

(f) The requirements for information for fact sheets for specialized craft such as semi-submersibles, hydrofoils, hovercraft and other vessels of unusual design will be specified on a case by case basis.

(R.S. 4405, as amended, R.S. 4417a, as amended, R.S. 4462, as amended, sec. 6(b)(1), 80 Stat. 937, 46 U.S.C. 375, 391a, 416, 49 U.S.C. 1655(b)(1); 49 CFR 1.46(b) and (o)(4))

[CGD 73-78, 40 FR 2689, Jan. 15, 1975]

Subpart 97.20—Whistling

§ 97.20-1 Unnecessary whistling prohibited.

(a) The unnecessary sounding of the vessel's whistle is prohibited within any harbor limits of the United States.

Subpart 97.23—Unauthorized Lights

§ 97.23-1 Unauthorized lights prohibited.

(a) The master shall not authorize or permit the carrying of any lights not required by law that in any way will interfere with the distinguishing of the signal lights.

Subpart 97.25—Searchlights

§ 97.25-1 Improper use prohibited.

(a) No person shall flash or cause to be flashed the rays of a searchlight or other blinding light onto the bridge or into the pilothouse of any vessel under way.

Subpart 97.27—Lookouts

§ 97.27-5 Master's and officer's responsibility.

(a) Nothing in this part shall exonerate any master or officer in command from the consequences of any neglect to keep a proper lookout or to maintain a proper fire watch or from any neglect of any precaution which may be required by the ordinary practice of seamen or by the special circumstances of the case. When circumstances require it, additional watches shall be maintained to guard against fire or other danger and to give an alarm in case of accident or disaster.

§ 97.27-10 Reckless or negligent operation prohibited by law.

(a) Subsection 13(a) of the act of April 25, 1940 (46 U.S.C. 526*l*), reads as follows:

No person shall operate any motorboat or any vessel in a reckless or negligent manner so as to endanger the life, limb, or property of any person. To "operate" means to navigate or otherwise use a motorboat or a vessel.

Subpart 97.30—Reports of Accidents, Repairs, and Unsafe Equipment

AUTHORITY: Interpret or apply R.S. 4450, as amended, 4453, as amended, sec. 10, 18 Stat. 128, as amended; 46 U.S.C. 239, 435, 33 U.S.C. 361, unless otherwise noted.

§ 97.30-1 Repairs to boilers and pressure vessels.

(a) Before making any repairs to boilers or unfired pressure vessels, the chief engineer shall submit a report covering the nature of the repairs to the Officer in Charge, Marine Inspection, at or nearest to the port where the repairs are to be made.

§ 97.30-5 Accidents to machinery.

(a) In the event of an accident to a boiler, unfired pressure vessel, or machinery tending to render the further use of the item unsafe until repairs are made, or if by ordinary wear such items become unsafe, a report shall be made, by the chief engineer immediately to the Officer in Charge, Marine Inspection, or if at sea immediately upon arrival at port.

§ 97.30-10 Notice required before repair.

(a) No repairs or alterations, except in an emergency, shall be made to any lifesaving or fire detecting or extinguishing equipment without advance notice to the Officer in Charge, Marine Inspection. When emergency repairs or alterations have been made, notice shall be given to the Officer in Charge, Marine Inspection, as soon as practicable.

§ 97.30-20 Breaking of safety valve seal.

(a) If at any time it is necessary to break the seal on a safety valve for any purpose, the chief engineer shall advise the Officer in Charge, Marine Inspection, at the next port of call, giving the reason for breaking the seal and requesting that the valve be examined and adjusted by an inspector.

(R.S. 4419, as amended; 46 U.S.C. 393)

Subpart 97.33—Cable Traveler

§ 97.33-1 When required.

(a) On vessels where the distance between deck houses is more than 150 feet, a wire cable shall be stretched between the deck houses at all times when the vessel is navigating in other than protected waters. As many loose rings with lanyards shall be attached as deemed necessary by the master. In any case, a properly constructed raised catwalk or raised bridge or a below deck passage may be substituted for the required cable.

(R.S. 4488, as amended; 46 U.S.C. 481)

Subpart 97.34—Work Vests

AUTHORITY: Interpret or apply R.S. 4488, as amended, 4491, as amended; 46 U.S.C. 481, 489.

§ 97.34-1 Application.

(a) Provisions of this subpart shall apply to all vessels inspected and certificated in accordance with this subchapter.

§ 97.34-5 Approved unicellular plastic foam work vests.

(a) Buoyant work vests carried under the permissive authority of this subpart shall conform to the specifications contained in Subpart 160.053 in Subchapter Q (Specifications) of this chapter.

§ 97.34-10 Use.

(a) Approved buoyant work vests are considered to be items of safety apparel and may be carried aboard vessels to be worn by crew members when working near or over the water under favorable working conditions. They shall be used under the supervision and control of designated ship's officers. When carried, such vests shall not be accepted in lieu of any portion of the required number of approved life preservers and shall not be substituted for the approved life preservers required to be worn during drills and emergencies.

§ 97.34-15 Shipboard stowage.

(a) The approved buoyant work vests shall be stowed separately from the regular stowage of approved life preservers.

(b) The locations for the stowage of work vests shall be such as not to be easily confused with that for approved life preservers.

§ 97.34-20 Shipboard inspections.

(a) Each work vest shall be subject to examination by a marine inspector to determine its serviceability. If found to be satisfactory, it may be continued in service, but shall not be stamped by a marine inspector with a Coast Guard stamp. If a work vest is found not to be in a serviceable condition, then such work vest shall be removed from the vessel. If a work vest is beyond repair, it shall be destroyed or mutilated in the presence of a marine inspector so as to prevent its continued use as a work vest.

Subpart 97.35—Logbook Entries

§ 97.35-1 Application.

(a) Except as specifically noted, the provisions of this subpart shall apply to all vessels other than motorboats and barges. Motorboats on an international or intercoastal voyage may be required to carry a logbook in accordance with § 97.35-10.

§ 97.35-3 Logbooks and records.

(a) Under various statutes or by regulations in this subchapter, vessels engaged in all trades, with the exception of vessels engaged exclusively in trade on rivers of the United States shall have certain logbooks or records, and, when the occasion arises, it is the duty of the master or person in charge to place therein specific entries as required by law or regulations in this chapter.

(b) R.S. 4290, as amended (46 U.S.C. 201), states: "Every vessel making voyages from a port in the United States to any foreign port, or, being of the burden of 75 tons or upward, from a port on the Atlantic to a port on the Pacific, or vice versa, shall have an Official Logbook; * * *." This Official Logbook is furnished gratuitously to masters of United States' flag vessels by the Coast Guard, as Form CG-706B or CG-706C, depending upon the number of persons employed as crew. There is printed in the first several pages of this Official Logbook various acts of Congress relating to logbooks and the entries required to be made therein. When a voyage is completed, or after a specified period of time is completed, the Official Logbooks with required entries therein shall be filed with the Officer in Charge, Marine Inspection, at or nearest the port where the vessel may be.

(c) For vessels other than those required to have Official Logbooks by R.S. 4290, the owners, operators, and/or masters are to supply their own logs or records in any form desired, which will be considered to take the place of the Official Logbooks and may be used for the purpose of making entries therein as required by law or regulations in this subchapter. Such logs or records are not filed with the Officer in Charge, Marine Inspection, but shall be kept available for review by a marine inspector for a period of one year after the date to which the records refer, except for separate records of tests and inspections of fire-fighting equipment which shall be maintained with the vessel's logs for the period of validity of the vessel's certificate of inspection.

§ 97.35-5 Actions required to be logged.

(a) The actions and observations noted in this section shall be entered in the official log book. This section contains no requirements which are not made in other portions of this subchapter, the items being merely grouped together for convenience.

(1) Fire and Boat Drills. Weekly. See § 97.15-35.

(2) Steering Gear, Whistle, and Means of Communication. Prior to departure. See § 97.15-3.

(3) Drafts and Load Line Markings. Prior to leaving port, ocean, coastwise, and Great Lakes services only. See § 97.15-5.

(4) Hatches and other openings. All openings and closings, or leaving port without closing. Except vessels on protected waters. See § 97.15-20.

(5) Line Throwing Appliances. Once every 3 months. See § 97.15-25.

(6) Emergency Lighting and Power Systems. Weekly and semi-annually. See § 97.15-30.

(7) Electric Power Operated Lifeboat Winches. Once every 3 months. See § 97.15-40.

(8) Fuel oil data: Upon receipt of fuel oil on board. See § 97.15-55.

(9) Cargo gear inspections: At least once a month. See § 91.37-70 of this subchapter.

§ 97.35-10 Official log entries.

(a) On vessels where an Official Logbook is required by R.S. 4290 (46 U.S.C. 201), all items relative to the crew and passengers, as well as with respect to any casualties which may occur, shall be entered in the Official Logbook as required by this law.

Subpart 97.36—Display of Plans

§ 97.36-1 When required.

(a) Barges with sleeping accommodations for more than six persons and all self-propelled vessels shall have permanently exhibited for the guidance of the officer in charge of the vessel, general arrangement plans showing for each deck the various fire-retardant bulkheads together with particulars of the fire detecting, manual alarm and fire extinguishing systems, fire doors, means of ingress to the different compartments, and the ventilating systems including the positions of the dampers, the location of the remote means of stopping the fans, and the identification of the fans serving each section. If cargo compartments are "specially suitable for vehicles," they shall be so indicated on the plan.

[CGFR 66-33, 31 FR 15286, Dec. 6, 1966]

Subpart 97.37—Markings for Fire and Emergency Equipment, Etc.

AUTHORITY: Interpret or apply R.S. 4488, as amended: 46 U.S.C. 481.

§ 97.37-1 Application.

(a) The provisions of this subpart, with the exception of § 97.37-90, shall apply to all vessels contracted for on or after November 19, 1952. Vessels contracted for prior to November 19, 1952, shall meet the requirements of § 97.37-90.

§ 97.37-3 General.

(a) It is the intent of this subpart to provide such markings as are necessary for the guidance of the person on board in case of an emergency. In any specific case, and particularly on small vessels, where it can be shown to the satisfaction of the Officer in Charge, Marine Inspection, that the prescribed markings are unnecessary for the guidance of the persons on board in case of emergency, such markings may be modified or omitted.

(b) In addition to English, all stateroom notices, directional signs, etc., shall be printed in languages appropriate to the service of the vessel or other action be taken to achieve the same purpose.

(c) Where in this subpart red letters are specified, letters of a contrasting color on a red background will be accepted.

§ 97.37-5 General alarm bell switch.

(a) The general alarm bell switch in the pilothouse shall be clearly and permanently identified by lettering on a metal plate or with a sign in red letters on a suitable background: "GENERAL ALARM."

CROSS REFERENCE: See also § 113.25-20 of Subchapter J (Electrical Engineering) of this chapter.

§ 97.37-7 General alarm bells.

(a) All general alarm bells shall be identified by red lettering at least ½ inch high: "GENERAL ALARM—WHEN BELL RINGS GO TO YOUR STATION."

§ 97.37-9 Carbon dioxide alarm.

(a) All carbon dioxide alarms shall be conspicuously identified: "WHEN ALARM SOUNDS—VACATE AT ONCE. CARBON DIOXIDE BEING RELEASED."

§ 97.37-10 Fire extinguishing system branch lines.

(a) The branch line valves of all fire extinguishing systems shall be plainly and permanently marked indicating the spaces served.

§ 97.37-13 Fire extinguishing system controls.

(a) The control cabinets or spaces containing valves or manifolds for the various fire extinguishing systems shall be distinctly marked in conspicuous red letters at least 2 inches high: "STEAM FIRE APPARATUS," "CARBON DIOXIDE FIRE APPARATUS," "FOAM FIRE APPARATUS," or "WATER SPRAY FIRE APPARATUS" as the case may be.

§ 97.37-15 Fire hose stations.

(a) Each fire hydrant shall be identified in red letters and figures at least two inches high "FIRE STATION NO. 1," "2," "3," etc. Where the hose is not stowed in the open or behind glass so

as to be readily seen, this identification shall be so placed as to be readily seen from a distance.

§ 97.37-20 Self-contained breathing apparatus and gas masks.

(a) Lockers or spaces containing self-contained breathing apparatus shall be marked "SELF-CONTAINED BREATHING APPARATUS."

§ 97.37-23 Hand portable fire extinguishers.

(a) Each hand portable fire extinguisher shall be marked with a number and the location where stowed shall be marked with a corresponding number at least ½ inch high. Where only one type and size of hand portable fire extinguisher is carried, the numbering may be omitted.

§ 97.37-25 Emergency lights.

(a) All emergency lights shall be marked with a letter "E" at least ½ inch high.

§ 97.37-33 Instructions for changing steering gear.

(a) Instructions in at least ½ inch letters and figures shall be posted in the steering engine room, relating in order, the different steps to be taken in changing to the emergency steering gear. Each clutch, gear, wheel, lever, valve, or switch which is used during the changeover shall be numbered or lettered on a metal plate or painted so that the markings can be recognized at a reasonable distance. The instructions shall indicate each clutch or pin to be "in" or "out" and each valve or switch which is to be "opened" or "closed" in shifting to any means of steering for which the vessel is equipped. Instructions shall be included to line up all steering wheels and rudder amidship before changing gears.

§ 97.37-35 Rudder orders.

(a) At all steering stations, there shall be installed a suitable notice on the wheel or device or in such other position as to be directly in the helmsman's line of vision, to indicate the direction in which the wheel or device must be turned for "right rudder" and for "left rudder."

§ 97.37-37 Lifeboats.

(a) The name of the vessel shall be plainly marked or painted on each side of the bow of each lifeboat in letters not less than 3 inches high. For vessels on an international voyage, the vessel's port of registry shall be added in similar type letters.

(b) The number of each lifeboat shall be plainly marked or painted on each side of the bow of each lifeboat in figures not less than 3 inches high. The lifeboats on each side of the vessel shall be numbered from forward aft, with the odd numbers on the starboard side.

(c) The cubical contents and number of persons allowed to be carried in each lifeboat shall be plainly marked or painted on each side of the bow of each lifeboat in letters and numbers not less than 1½ inches high. In addition, the number of persons allowed shall be plainly marked or painted on top of at least 2 thwarts in letters and numbers not less than 3 inches high.

(d) All oars shall be conspicuously marked with the vessel's name.

(e) Where mechanical disengaging apparatus is used, the control effecting the release of the lifeboat shall be painted bright red and shall have thereon in raised letters either the words—"DANGER—LEVER DROPS BOAT", or the words—"DANGER—LEVER RELEASES HOOKS".

(f) The top of thwarts, side benches and footings of lifeboats shall be painted or otherwise colored international orange. The area in way of the red mechanical disengaging gear control lever, from the keel to the side bench, shall be painted or otherwise colored white, to provide a contrasting background for the lever. This band of white should be approximately 12 inches wide depending on the internal arrangements of the lifeboat.

§ 97.37-40 Liferafts, lifefloats and buoyant apparatus.

(a) Rigid type liferafts, lifefloats, and buoyant apparatus, together with their oars and paddles, shall be conspicuously marked with the vessel's name. For vessels on an international voyage, the vessel's port of registry

also shall be similarly marked on lifefloats and buoyant apparatus.

(b) The number of persons allowed on each rigid type liferaft, lifefloat, and buoyant apparatus shall be conspicuously marked or painted thereon in letters and numbers at least 1½ inches high.

(c) There shall be stenciled in a conspicuous place in the immediate vicinity of each inflatable liferaft the following:

INFLATABLE LIFERAFT NO.————

———— PERSONS CAPACITY

These markings shall not be placed on the inflatable life raft containers.

NOTE: See § 94.10-5(b)(2)(ii) and (iii) and § 160.051-8 of this chapter for required markings on an inflatable liferaft and a liferaft's container.

[CGFR 65-50, 30 FR 17011, Dec. 30, 1965, as amended by CGFR 66-33, 31 FR 15286, Dec. 6, 1966; CGD 75-040, 40 FR 58454, Dec. 17, 1975]

§ 97.37-43 Life preservers, exposure suits, wood floats, and ring life buoys.

(a) Each life preserver, exposure suit, wood float, and ring life buoy must be marked with the vessel's name.

(b) For vessels on an international voyage, the vessel's port of registry shall be added in similar type letters on all ring life buoys.

[CGFR 65-50, 30 FR 17011, Dec. 30, 1965, as amended by CGD 76-003a, 45 FR 24478, Apr. 10, 1980; 45 FR 29588, May 5, 1980]

§ 97.37-45 Fire hose and axes.

(a) All fire hose and axes shall be marked with the vessel's name.

§ 97.37-47 Portable magazine chests.

(a) Portable magazine chests shall be marked in letters at least 3 inches high: "PORTABLE MAGAZINE CHEST — FLAMMABLE — KEEP LIGHTS AND FIRE AWAY."

§ 97.37-50 Ventilation alarm failure.

(a) The alarm required by § 92.15-10(d)(4) of this subchapter, which indicates the loss of required ventilation in spaces specially suitable for vehicles, shall be marked with a conspicuous sign in at least ¼-inch letters "VENTILATION FAILURE IN VEHICULAR SPACE."

[CGFR 66-33, 31 FR 15286, Dec. 6, 1966]

§ 97.37-55 Emergency position indicating radiobeacon (EPIRB).

The EPIRB required in § 94.60-1 of this subchapter must be marked with the vessel's name.

[CGD 73-24R, 39 FR 10139, Mar. 18, 1974]

§ 97.37-90 Vessels contracted for prior to November 19, 1952.

(a) Vessels contracted for prior to November 19, 1952, shall meet the requirements of this paragraph.

(1) The requirements of §§ 97.37-5 through 97.37-50 shall be met with the exception that existing signs and markings containing the same general intent, but not necessarily identical wording or exact letter type, size, or color, may be retained so long as they are in good condition to the satisfaction of the Officer in Charge, Marine Inspection.

[CGFR 65-50, 30 FR 17011, Dec. 30, 1965, as amended by CGFR 66-33, 31 FR 15286, Dec. 6, 1966]

Subpart 97.39—Posting Placards of Instructions for Launching and Inflating Inflatable Liferafts

§ 97.39-1 When required.

(a) Every vessel equipped with inflatable liferafts shall have posted in conspicuous places which are regularly accessible to the crew and/or passengers, approved placards containing instructions for launching and inflating inflatable liferafts for the information of persons on board. The number and location of such placards shall be as determined necessary by the Officer in Charge, Marine Inspection.

(b) Under the requirements contained in § 160.051-6(c)(1) of Subpart 160.051 in Subchapter Q (Specifications) of this chapter, the manufacturer of approved inflatable liferafts is required to provide approved placards containing such instructions with each liferaft.

Subpart 97.40—Markings on Vessels

§ 97.40-1 Application.

(a) The provisions of this subpart shall apply to all vessels except as specifically noted.

§ 97.40-5 Hull markings.

Vessels shall be marked as required by Parts 67 and 69 of this chapter.

[CGD 72-104R, 37 FR 14233, July 18, 1972]

§ 97.40-10 Draft marks.

(a) All vessels 50 gross tons and over, under the jurisdiction of the U.S. Coast Guard, shall have the draft of the vessel plainly and legibly marked upon the stem and upon the sternpost or rudderpost or at any place at the stern of the vessel as may be necessary for easy observance. The draft shall be taken from the bottom of the keel at the marks to the surface of the water, the bottom of the mark to indicate the draft in feet.

(b) In cases where the keel does not extend forward or aft to the location of the draft marks, due to raked stem or cut away skeg, the datum line from which the draft shall be taken shall be obtained by projecting the line of the bottom of keel forward or aft, as the case may be, to the location of the draft marks.

(c) In cases where a vessel may have a skeg or other appendage extending locally below the line of the keel, the draft at the end of the vessel adjacent to such appendage shall be measured to a line tangent to the lowest part of such appendage and parallel to the line of the bottom of the keel.

§ 97.40-15 Load line marks.

(a) Vessels assigned a load line shall have the deck line and the load line marks permanently scribed or embossed as required by Subchapter E (Load Lines) of this chapter.

Subpart 97.43—Placard of Lifesaving Signals and Breeches Buoy Instructions

§ 97.43-1 Application.

(a) The provisions of this subpart shall apply to all vessels on an international voyage, and to all other vessels of 150 gross tons or over certificated for ocean, coastwise or Great Lakes service.

§ 97.43-5 Availability.

(a) On all vessels to which this subpart applies there shall be posted in the pilothouse and readily available to the deck officer of the watch a placard (Form CG-811) containing instructions for the use of breeches buoys and the lifesaving signals as set forth in Regulation 16, Chapter V, of the International Convention for Safety of Life at Sea, 1960. These signals shall be used by vessels or persons in distress when communicating with lifesaving stations and maritime rescue units.

(b) A copy of Form CG-811 shall also be conveniently posted in the engineroom and crew's quarters of all vessels to which this subpart applies.

Subpart 97.45—Carrying of Excess Steam

§ 97.45-1 Master and chief engineer responsible.

(a) It shall be the duty of the master and the engineer in charge of the boilers of any vessel to require that a steam pressure is not carried in excess of that allowed by the certificate of inspection, and to require that the safety valves, once set and sealed by the inspector, are in no way tampered with or made inoperative except as provided in § 97.30-20.

Subpart 97.47—Routing Instructions

§ 97.47-1 All persons must comply.

(a) Due to existing mine field dangers, all licensed masters, officers, and certificated seamen on United States vessels shall comply strictly with the routing instructions issued by competent naval authority. Failure to comply with such routing instructions shall be deemed misconduct within the meaning of R.S. 4450, as amended (46 U.S.C. 239). Nothing herein shall be construed as relieving the master of the responsibility for the safety of his vessel.

Subpart 97.50—Compliance With Provisions of Certificate of Inspection

§ 97.50–1 Master or person in charge responsible.

(a) It shall be the duty of the master or other person in charge of the vessel to see that all of the provisions of the certificate of inspection are strictly adhered to. Nothing in this subpart shall be construed as limiting the master or other person in charge of the vessel, at his own responsibility, from diverting from the route prescribed in the certificate of inspection or taking such other steps as he deems necessary and prudent to assist vessels in distress or for other similar emergencies.

Subpart 97.53—Exhibition of License

§ 97.53–1 Licensed officers.

(a) All licensed officers on a vessel shall have their licenses conspicuously displayed as required by R.S. 4446, 46 U.S.C. 232.

Subpart 97.55—De-Energizing of Cargo Hold Lighting Circuits When Grain or Other Combustible Bulk Cargo Is Carried

AUTHORITY: R.S. 4488, as amended; 46 U.S.C. 481.

§ 97.55–1 Master's responsibility.

(a) Before loading bulk grain, or similar combustible bulk cargo, the master shall have the lighting circuits to cargo compartments in which the bulk cargo is to be loaded de-energized at the distribution panel or panel board. He shall thereafter have periodic inspections made of the panel or panel board as frequently as necessary to ascertain that the affected circuits remain de-energized while this bulk cargo remains within the vessel.

§ 97.55–5 Warning notice posted.

(a) As a precaution against any subsequent unintentional re-energizing of the circuits specified above, an appropriate notice shall be posted at the location where the control is effected warning against re-energizing these circuits. Such notice shall remain posted while this bulk cargo remains within the vessel.

Subpart 97.60—Motion Picture Film and Equipment

§ 97.60–1 Type required.

(a) Only acetate or slow-burning film may be used. Nitrocellulose film is specifically prohibited.

(b) Projectors shall be of an approved type.

(R.S. 4488, as amended; 46 U.S.C. 481)

Subpart 97.70—Power-Operated Industrial Trucks

AUTHORITY: Interpret or apply R.S. 4417a, as amended, 4472, as amended, 4488, as amended, 4491, as amended; 46 U.S.C. 391a, 170, 481, 489.

§ 97.70–1 Application.

(a) *Power-operated industrial trucks.* (1) Except as provided in paragraph (a)(3) of this section, power-operated industrial trucks carried on board a vessel as part of the vessel's equipment for handling materials of any kind shall be in compliance with the applicable provisions of this subpart.

(2) Except as provided in paragraph (a)(3) of this section, power-operated industrial trucks placed on board vessels for handling materials of any kind shall be in compliance with the applicable provisions of this subpart when such vessels are within the navigable waters of the United States, its territories and possessions but not including the Panama Canal Zone.

(3) When power-operated industrial trucks are used in spaces not containing dangerous or hazardous articles, as set forth in § 97.70–10(f), the installation of the minimum safety features of § 97.70–7(c) shall be carried out at the earliest opportunity but in any case not later than July 1, 1963.

(b) *Vessels.* (1) Vessels shall be in compliance with the applicable provisions of this subpart during those periods of time when power-operated industrial trucks are on board as part of the vessel's equipment or when such trucks are placed on board for handling materials of any kind.

NOTE: The regulations affecting the use of power-operated industrial trucks on foreign vessels are in Part 146 of Subchapter N (Dangerous Cargoes) or in the case of foreign tank vessels in Subpart 35.70 of Subchapter D (Tank Vessels) of this chapter.

§ 97.70-3 Alternates.

(a) In cases of undue hardship resulting from unavoidable delays in bringing existing power-operated industrial trucks into compliance with the applicable provisions of this subpart, the Commandant may permit the use of alternate equipment, apparatus, or arrangement for such period of time, and to such extent, and upon such conditions as will assure, to the Commandant's satisfaction, a degree of safety consistent with the minimum standards as set forth in this subpart.

(b) The methods and procedures adopted in connection with the modification of existing equipment to meet required laboratory designations will be taken into consideration in granting permission to use alternate arrangements for a limited period of time.

§ 97.70-5 Definitions of terms used in subpart.

(a) Power-operated industrial trucks are considered to be tractors, lift trucks, and other specialized industrial trucks used for material handling on board a vessel.

(b) For the purpose of the regulations in this subpart, the words "flammable" and "inflammable" are interchangeable or synonymous terms.

§ 97.70-7 Approved power-operated industrial trucks.

(a) Where approved power-operated industrial trucks are required by the regulations in this subchapter such approved trucks shall have a specific designation of a recognized testing laboratory. The following laboratories are recognized for the specific type designations listed:

(1) Underwriters' Laboratories, Inc. (Mailing address, P.O. Box 247, Northbrook, Ill., 60062) for trucks having recognized testing laboratory type designations E, EE, EX, G, GS, LP, LPS, D and DS.

(2) Factory Mutual Laboratories, Engineering Division, 1115 Boston-Providence Turnpike, Norwood, Mass., 02062, for trucks having recognized testing laboratory type designations E, EE, EX, G, GS, LP, LPS, D and DS.

(b) Description of recognized testing laboratory type designations are as follows:

(1) The "E" designated units are electrically powered units that have minimum acceptable safeguards against inherent fire hazards.

(2) The "EE" designated units are electrically powered units that have, in addition to all of the requirements for the "E" units, the electric motors and all other electrical equipment completely enclosed. In certain locations the "EE" unit may be used where the use of an "E" unit may not be considered safe.

(3) The "EX" designated units are electrically powered units that differ from the "E" and "EE" units in that the electrical fittings and equipment are so designed, constructed and assembled that the units may be used in certain atmospheres containing flammable vapors or dusts.

(4) The "G" designated units are gasoline powered units having minimum acceptable safeguards against inherent fire hazards.

(5) The "GS" designated units are gasoline powered units that are provided with additional safeguards to the exhaust, fuel and electrical systems. They may be used in some locations where the use of a "G" unit may not be considered safe.

(6) The "LP" designated units are similar to the "G" units except that they are liquefied petroleum gas engine powered instead of gasoline powered.

(7) The "LPS" designated units are units similar to the "GS" units except that liquefied petroleum gas is used for fuel instead of gasoline.

(8) The "D" designated units are units similar to the "G" units except that they are diesel engine powered instead of gasoline engine powered.

(9) The "DS" designated units are diesel powered units that are provided with additional safeguards to the exhaust, fuel and electrical systems. They may be used in some locations where a "D" unit may not be considered safe.

(c) In addition to the construction and design safety features required in order to obtain a recognized laboratory type designation, approved power-operated industrial trucks shall have at least the following minimum safety features where applicable:

(1) Power-operated industrial trucks shall be equipped with a warning horn, whistle, or gong, or other device that can be heard clearly above the normal shipboard noises.

(2) Wherever power-operated industrial truck operation exposes the operator to danger from falling objects, the truck shall be equipped with a driver's overhead guard. Where overall height of the truck with forks in the lowered position is limited by head room conditions the overhead guard may be omitted.

NOTE: This overhead guard is only intended to offer protection from the impact of small packages, boxes, bagged material, etc., representative of the job application. It is impractical to build a guard of sufficient strength to withstand the impact of a capacity load since such a guard would constitute a safety hazard because its structure would be so large that it might interfere with good visibility and would weigh so much that it might make the truck top-heavy and unstable.

(3) Power-operated fork lift trucks which handle small objects or unstable loads shall be equipped with a vertical load back rest or rack which shall have height, width and strength sufficient to prevent the load, or part of it, from falling toward the mast when the mast is in a position of maximum backward tilt.

(4) The forks on power-operated fork lift trucks shall be secured to the carriage so that unintentional lifting of the toe shall not occur on such application where this lifting may create a hazard. The factor of safety of forks shall be at least 3 to 1, based on the elastic limit of the material.

(5) Fork extensions or other attachments shall be suitably secured to prevent unintentional lifting or displacement on primary forks.

(6) All exposed wheels shall be provided with guards to prevent the wheels from throwing particles at the operator.

(7) Unless the steering mechanism is of a type that prevents road reactions from causing the steering handwheel to spin, the steering knob, if used, shall be of a mushroom type to engage the palm of the operator's hand, or shall be arranged in some other manner to prevent injury. The knob shall be mounted within the perimeter of the wheel.

(8) All steering controls shall be confined within the clearances of the truck, or so guarded that movement of the controls shall not result in injury to the operator when passing obstructions, stanchions, etc.

§ 97.70–10 Use of power-operated industrial trucks in various locations.

(a) *Spaces containing explosives.* (1) Except as otherwise provided in this paragraph, power-operated industrial trucks shall not be used in a space in which Class A, Class B, or Class C explosives are stowed.

NOTE: Class A, Class B and Class C explosives are defined in Part 146 of Subchapter N (Dangerous Cargoes) of this chapter.

(2) The Commandant may grant authority for the use of approved power-operated industrial trucks with a recognized testing laboratory designation of EX in spaces in which Class A, Class B or Class C explosives are stowed when it can be shown that such trucks can be used with safety.

(3) In a space in which packaged small arms ammunition without explosive bullets is stowed, only approved power-operated industrial trucks with a recognized testing laboratory designation of EX, EE, LPS, GS and DS may be used for handling cargo including the handling of such packaged small arms ammunition.

(b) *Spaces containing flammable liquids.* (1) In a space in which packaged flammable liquids are stowed, only approved power-operated industrial trucks with a recognized testing laboratory designation of EX, EE, GS, LPS, and DS may be used for handling cargo including the handling of such packaged flammable liquids.

(c) *Spaces containing flammable solids or oxidizing materials.* (1) In a space in which packaged flammable solids or oxidizing materials are stowed, only approved power-operated industrial trucks with a recognized

testing laboratory designation of EX, EE, GS, LPS, and DS may be used for handling cargo including the handling of such packaged flammable solids or oxidizing materials.

(2) When flammable solids or oxidizing materials are contained in closed cargo vans or closed containers and no other dangerous cargo is stowed in the hold or compartment, any standard commercial type power-operated industrial truck in safe operating condition and having the minimum safety features of § 97.70–7(c) may be used in the spaces.

(3) When oxidizing materials in bulk are stowed in the holds or compartment, any approved commercial type power-operated industrial truck may be used in the spaces.

(d) *Spaces containing hazardous articles.* (1) In a space in which packaged or baled hazardous articles of a fibrous nature or bulk sulfur are stowed, only approved power-operated industrial trucks with a recognized testing laboratory designation of EX, EE, GS, LPS and DS may be used for handling cargo, including the handling of such packaged or baled hazardous articles of a fibrous nature or bulk sulfur.

(2) When hazardous articles of a fibrous nature are contained in closed cargo vans or closed portable containers and no other dangerous cargo is stowed in the hold or compartment, any standard commercial type power-operated industrial truck in safe operating condition and having the minimum safety features of § 97.70–7(c) may be used in the spaces.

(e) *Spaces containing other dangerous cargoes and hazardous articles.* (1) In a space in which dangerous cargoes or hazardous articles subject to the regulations in Part 146 of this chapter except those provided for in paragraphs (a), (b), (c) and (d) of this section, any approved power-operated industrial truck may be used to handle cargo including the handling of such dangerous cargoes or hazardous articles.

(f) *Other spaces.* (1) Any standard commercial type power operated industrial truck in safe operating condition and having the minimum safety features of § 97.70–7(c) may be used in spaces and for handling cargo in spaces not otherwise restricted by regulation in this subpart.

§ 97.70–15 Special operating conditions.

(a) Notification shall be given to the master or senior deck officer on board before placing power-operated industrial trucks in use aboard the vessel.

(b) When power-operated industrial trucks are in use on board vessels subject to the regulations in this subchapter, they shall be in a safe operating condition.

(c) Spaces exposed to carbon monoxide or other hazardous vapors from exhausts of power-operated industrial trucks shall have adequate ventilation. The senior deck officer shall see that tests of the carbon monoxide content of the atmosphere are made as frequently as conditions require to insure that dangerous concentrations do not develop. Such tests shall be made in the area in which persons are working, by persons acquainted with the test equipment and procedure. The carbon monoxide concentration in the holds and intermediate decks where persons are working shall be maintained at not more than 50 parts per million (0.005%) as a time-weighted average, and persons shall be removed from the area if the concentration exceeds 75 parts per million (0.0075%). When necessary, portable blowers of adequate size and location shall be utilized.

(d) The parts and/or equipment of any power-operated industrial truck requiring replacement shall be replaced only by parts and/or equipment equivalent in safety when installed with those used in the original design.

(e) Any truck that emits sparks or flames from the exhaust system shall immediately be removed from service, and not again returned to service until the cause for the emission of such sparks or flames has been eliminated.

(f) When the temperature of any part of the truck is found to be in excess of a safe operating temperature, the truck shall be removed from service until such overheating has been corrected.

(g) Operation of trucks shall be halted immediately and the engines or

motors secured, whenever an emergency condition arises aboard the vessel.

(h) Operation of trucks shall be halted immediately and the engines or motors secured in the event of breakage or leakage of containers used for the carriage of flammable liquids, flammable solids or oxidizing materials.

(i) The rated capacity of a truck shall at all times be posted on the truck in a conspicuous place and such capacity shall not be exceeded.

(j) At least one approved 2-pound dry chemical hand portable fire extinguisher, or its approved equivalent, shall be affixed to the truck in a readily accessible position or kept in close proximity available for immediate use.

(k) Vessel's fire-fighting equipment, both fixed (where installed) and portable, in vicinity of space being worked shall be kept ready for immediate use.

[CGFR 65-50, 30 FR 17011, Dec. 30, 1965, as amended by CGFR 69-72, 34 FR 17485, Oct. 29, 1969]

§ 97.70-20 Refueling.

(a) *When permitted.* Power-operated industrial trucks are not permitted to be refueled in the hold of a vessel or on the weather deck except under the following conditions:

(1) Trucks using gasoline as fuel may be refueled in the hold or on the weather deck of a vessel only when such refueling is done with an acceptable portable nonspilling fuel handling system of not over 5 gallons capacity. Transfer of gasoline to these portable nonspilling fuel handling devices is not permitted on board the vessel.

(2) Power-operated industrial trucks using liquefied petroleum gas as fuel may be refueled in the hold or on the weather deck of a vessel only when fitted with removable tanks and provided the hand-operated shut-off valve of the depleted tank is closed and the engine is run until it stalls from lack of fuel before the quick disconnect fitting is opened. In addition, the quick disconnect fitting shall be attached to the fuel tank before the hand-operated shutoff valve is reopened.

(3) Power-operated industrial trucks using diesel oil as fuel may be refueled on the weather deck or in the hold of a vessel by means of portable containers of not over 5-gallon capacity. These trucks may also be refueled on the weather deck of a vessel or portable containers refilled from a larger container provided a suitable pump is used for the transfer operation and a drip pan of adequate size is supplied.

(b) *General requirements.* The following conditions must be met when refueling power-operated industrial trucks in the hold of a vessel or on the weather deck under the circumstances listed in paragraph (a) of this section:

(1) Refueling shall be under the direct supervision of an experienced and responsible person specifically designated for such job by the person in charge of the loading or unloading of the vessel.

(2) No refueling shall be undertaken with less than 2 persons specifically assigned and present for the complete operation, at least one of whom shall be experienced in using the portable fire extinguishers required in the fueling area.

(3) At least one approved 4-pound dry chemical hand portable fire extinguisher, or its approved equivalent shall be provided at the scene of the fueling area. This is in addition to portable extinguisher affixed to the truck in accordance with § 97.70-15(j).

(4) The location for refueling trucks shall be designated by the master or senior deck officer on board the vessel. "No Smoking" signs shall be posted in the area and smoking shall be prohibited.

(5) The location designated for refueling shall be adequately ventilated so as to insure against accumulation of a hazardous concentration of vapors. The ventilation requirements of § 97.70-15(c) when trucks are operating shall also apply when trucks are being refueled.

(6) Truck engines of all trucks in the same hold shall be stopped before any truck in that hold is refueled and before any fuel handling devices or unmounted liquefied petroleum gas cylinders are placed in the hold.

(7) All fuel handling devices and unmounted liquefied petroleum gas containers shall be removed from the hold before any truck engine is started and the trucks again placed in operation.

§ 97.70–25 Charging or replacing batteries.

(a) Batteries for electrically-powered industrial trucks and for the ignition systems of internal combustion engine-powered industrial trucks may be changed in the hold of a vessel provided the following conditions are met:

(1) Suitable handling equipment shall be employed.

(2) Adequate precautions shall be taken to avoid damage to the battery, short circuiting of the battery, and spillage of the electrolyte.

(b) Batteries of electrically-powered industrial trucks may be recharged in a hold of a vessel provided the following conditions are met:

(1) The batteries shall be housed in a suitable, ventilated, portable metal container with a suitable outlet at the top for connection of a portable air hose, or shall be placed directly beneath a suitable metal hood with a suitable outlet at the top for connection of a portable air hose. The air hose shall be permanently connected to an exhaust duct leading to the open deck and terminate in a gooseneck or other suitable weather head. If natural ventilation is not practicable or adequate, mechanical means of exhaust shall be employed in conjunction with the duct. The air outlet on the battery container shall be equipped with an interlock switch so arranged that the charging of the battery cannot take place unless the air hose is properly connected to the box.

(2) If mechanical ventilation is used, an additional interlock shall be provided between the fan and the charging circuit so that the fan must be in operation in order to complete the charging circuit for operation. It is preferable that this interlock switch be of a centrifugal type driven by the fan shaft.

(3) The hold shall not contain any cargo coming under the regulations in Part 146 of Subchapter N (Dangerous Cargoes) of this chapter.

(4) The charging facilities may be part of the truck equipment or may be separate from the truck and located inside or outside the cargo hold. The supply or charging circuit (whichever method is used) shall be connected to the truck by a portable plug connection of the break-away type. This portable plug shall be so engaged with the truck battery charging outlet that any movement of the truck away from the charging station will break the connection between the plug and receptacle without exposing any live parts to contact with a conducting surface or object, and without the plug falling to the deck where it may become subject to injury.

(c) All unmounted batteries shall be suitably protected or removed from an area in the hold of the vessel before trucks are operated in that area.

§ 97.70–30 Stowage of power-operated industrial trucks aboard a vessel.

(a) Power-operated industrial trucks may be stowed in any location aboard a vessel provided the following conditions are met:

(1) Gasoline powered trucks shall have all the fuel expended from the system.

(2) Liquefied petroleum gas powered trucks shall have the fuel tanks removed and all the fuel expended from the system.

(b) Power-operated industrial trucks not meeting the conditions set forth in paragraph (a) of this section shall be stowed on the open deck except for intervals such as lunch hours, between work shifts, interdock and intraport movements. If stowed in a fixed metal enclosure located on or above the weather deck, such enclosure, in addition having the carbon dioxide extinguishing system required by § 95.05–10(c) of this subchapter, shall have access from the weather deck only and shall have adequate ventilation, so arranged as to remove vapors from both the upper and lower portions of the space.

[CGFR 65–50, 30 FR 17011, Dec. 30, 1965, as amended by CGFR 67–90, 33 FR 1016, Jan. 26, 1968]

§ 97.70–35 Stowage of fuel handling devices aboard a vessel.

(a) Flammable liquids and gases to be used as fuels for power-operated industrial trucks shall be marked, labeled and stowed as follows:

(1) They shall be stowed in ICC specification containers, A.S.M.E. containers or portable safety containers

having the approval of a recognized testing laboratory, which containers are authorized for the contents.

(2) Containers shall be marked with the name of the contents and shall be labeled in accordance with ICC requirements as follows:

(i) Flammable liquids—"Red Label"; or,

(ii) Flammable gases—"Red Gas Label".

(3) Containers shall be stowed on or above the weather deck in locations designated by the master. ICC specification containers, A.S.M.E. containers, or portable safety containers having the approval of a recognized testing laboratory may be stowed below the weather deck in a paint or lamp locker provided such containers do not exceed 5 gallons capacity each.

(b) Diesel fuel shall be stowed in locations designated by the master.

Subpart 97.75—Prevention of Oil Pollution

§ 97.75-1 General requirements.

A cargo vessel must be operated to meet the requirements in—

(a) Section 311 of the Federal Water Pollution Control Act, as amended (86 Stat. 816; 33 U.S.C. 1321);

(b) Section 12 of the Oil Pollution Act, 1961, as amended (75 Stat. 404; 33 U.S.C. 1011); and

(c) 33 CFR Parts 151, 155, and 156.

[CGD 73-58R, 39 FR 18767, May 30, 1974]

Subpart 97.80—Operation of Vehicles in Enclosed Locations

§ 97.80-1 Special operating conditions.

(a) The operation of self-propelled vehicles in enclosed locations (other than power-operated industrial trucks when subject to Subpart 97.70 of this part) shall be permitted only when the other conditions in this section have been met.

(b) Spaces exposed to carbon monoxide or other hazardous vapors from exhausts of power-operated industrial trucks shall have adequate ventilation. The senior deck officer shall see that tests of the carbon monoxide content of the atmosphere are made as frequently as conditions require to insure that dangerous concentrations do not develop. Such tests shall be made in the area in which persons are working, by persons acquainted with the test equipment and procedure. The carbon monoxide concentration in the holds and intermediate decks where persons are working shall be maintained at not more than 50 parts per million (0.005%) as a time-weighted average, and persons shall be removed from the area if the concentration exceeds 75 parts per million (0.0075%). When necessary, portable blowers of adequate size and location shall be utilized.

[CGFR 66-33, 31 FR 15286, Dec. 6, 1966, as amended by CGFR 69-72, 34 FR 17485, Oct. 29, 1969]

Subpart 97.85—Exposure Suits

AUTHORITY: 46 U.S.C. 375, 391a, 416, and 481; 49 U.S.C. 1655(b); 49 CFR 1.46.

SOURCE: CGD 76-003a, 45 FR 24478, Apr. 10, 1980; 45 FR 29588, May 5, 1980, unless otherwise noted.

§ 97.85-1 Applicability.

This subpart applies to each vessel when operating on the Great Lakes.

§ 97.85-5 Stowage of exposure suits.

The master or person in charge of a vessel shall ensure that:

(a) Each exposure suit required by § 94.41-5(a) is stowed in a readily accessible location in or near the berthing area of the person for whom the exposure suit is provided;

(b) Each exposure suit required by § 94.41-5(b) for a watch or work station is stowed in a readily accessible location in or near the station; and

(c) If child size exposure suits are carried, each one is stowed in a manner that prevents mistaking it for an adult size.

§ 97.85-10 Child size exposure suit required.

The master or person in charge of a vessel shall ensure that children, when carried, are provided with child size exposure suits.

PART 98—SPECIAL CONSTRUCTION, ARRANGEMENT, AND OTHER PROVISIONS FOR CERTAIN DANGEROUS CARGOES IN BULK

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98.35-3 Authorization for commodities.
98.35-5 Definitions.
98.35-7 Plan approval.
98.35-10 Construction.
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98.35-15 Markings.
98.35-20 Mounting, lifting and securing arrangements.
98.35-25 Handling and stowage.
98.35-27 Outage.
98.35-30 Firefighting requirements.
98.35-35—98.35-40 [Reserved]
98.35-45 Initial tests.
98.35-50 Periodic tests and inspections.

AUTHORITY: R.S. 4405, as amended, 4462, as amended, 4472, as amended, sec. 6(b)(1), 80 Stat. 938; 46 U.S.C. 375, 416, 170, 49 U.S.C. 1655(b); 49 CFR 1.46(b) (35 FR 4959). Interpret or apply R.S. 4417a, as amended, 4488, as amended, sec. 3, 68 Stat. 675; 46 U.S.C. 391a, 481, 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 FR 9671, 3 CFR, 1965 Supp., unless otherwise noted.

SOURCE: CGFR 65-50, 30 FR 17022, Dec. 30, 1965, unless otherwise noted.

Subpart 98.01—Application

§ 98.01-1 General.

(a) The provisions of this part shall apply to all self-propelled cargo vessels which carry in bulk any of the dangerous cargoes specifically noted in this part.

(b) The provisions of Subpart 98.35 shall apply to portable tanks for the transportation of combustible liquids on board cargo vessels described in § 90.05-1 in this subchapter. Certain provisions in Subpart 98.35 apply to United States flag vessels and to foreign vessels when such vessels have on board combustible liquid cargo in portable tanks other than in drums, barrels, or other packages.

(c) The regulations for barges carrying any of the bulk chemical cargoes listed in Subparts 98.01 through 98.25 are found in Subchapter O of this chapter.

(d) The word "vessel" as used in Subparts 98.01 through 98.25 refers to a self-propelled cargo vessel.

(e) Manned barges carrying any of the cargoes listed in Table 151.01-

10(b) of this chapter will be considered individually by the Commandant and may be required to meet the applicable requirements of Subchapter O of this chapter, as well as the requirements of this subchapter.

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 70-10, 35 FR 3711, Feb. 25, 1970]

§ 98.01-5 Effective date.

(a) The provisions in this part which require inspection and certification of vessels shall be in effect on and after January 1, 1959, for new construction and on and after January 1, 1960, for existing vessels. Vessels in existence on January 1, 1959, and vessels contracted for prior to January 1, 1959, which may carry in bulk any of the dangerous cargoes specifically noted in this part shall meet the applicable requirements of this subchapter or Subchapter D (Tank Vessels) of this chapter, as is reasonable and practicable in the opinion of the Officer in Charge, Marine Inspection, to qualify for certification. In this respect the Officer in Charge, Marine Inspection, may grant departures from specific requirements of this chapter if in his opinion the circumstances warrant such departures. In any case the Officer in Charge, Marine Inspection, shall satisfy himself that the vessel and its equipment are in good condition and satisfactory for the purposes intended.

(b) The other provisions of this part shall be in effect on and after July 1, 1958.

(c) The provisions of Subpart 98.35 regarding portable tanks for combustible liquids shall be in effect on and after March 1, 1963.

(d) [Reserved]

(e) Those items and markings which are in use on vessels, previously approved by the Commandant but not complying with the latest requirements, may be continued in use so long as they are maintained in good and serviceable condition to the satisfaction of the Officer in Charge, Marine Inspection, until replacement is deemed necessary by such officer or as specified in the regulations.

(R.S. 4472, as amended (46 U.S.C. 170); sec. 201, 86 Stat. 427, as amended (46 U.S.C. 391a); sec. 6(b)(1), 80 Stat. 937 (49 U.S.C. 1655(b)(1); 49 CFR 1.46 (b), (t), (n)(4))

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 68-82, 33 FR 18901, Dec. 18, 1968; CGD 73-96, 42 FR 49025, Sept. 26, 1977]

Subpart 98.25—Anhydrous Ammonia in Bulk

§ 98.25-1 Applicability.

(a) The regulations in this subpart apply to each self-propelled vessel that has anhydrous ammonia on board as a cargo, cargo residue, or vapor and that is not regulated under Part 154 of this chapter.

(b) Any self-propelled vessel to which this subpart applies shall be inspected and certificated under this Subchapter and Subchapter D of this chapter.

(92 Stat. 1480 (Port and Tanker Safety Act of 1978, 46 U.S.C. 391a); 49 CFR 1.46(n)(4))

[CGD 74-289, 44 FR 26008, May 3, 1979]

§ 98.25-5 How anhydrous ammonia may be carried.

(a) Anhydrous ammonia shall be carried in unfired pressure vessel type tanks independent of the structure as detailed in this part, except as otherwise provided in paragraph (b) of this section.

(b) When anhydrous ammonia is to be transported at its boiling temperature at or near atmospheric pressure, the Commandant may permit the use of alternate methods of storage if it is shown to his satisfaction that a degree of safety is obtained consistent with the minimum requirements of this subpart.

§ 98.25-10 Design and construction of cargo tanks.

(a) The cargo tanks shall meet the requirements for Class I, I-L, II, or II-L welded pressure vessels and shall be fabricated, inspected, and tested in accordance with the applicable requirements of Part 54 of Subchapter F (Marine Engineering) of this chapter.

(b) Unlagged cargo tanks subject to atmospheric temperatures shall be designed for a pressure of not less than 250 pounds per square inch gage.

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(c) Where unrefrigerated cargo tanks are lagged as required by §§ 98.25-30 and 98.25-60, the tanks shall be designed for a pressure of not less than 215 pounds per square inch gage.

(d) Refrigerated cargo tanks, in which the temperature of the liquid ammonia is maintained below the normal atmospheric temperatures, shall be designed for a pressure of not less than the vapor pressure corresponding to the temperature of the liquid at which the system is to be maintained, plus 25 pounds per square inch gage.

(e) Each tank shall be provided with not less than a 15" x 18" diameter manhole, fitted with a cover located above the maximum liquid level and as close as possible to the top of the tank. Where access trunks are fitted to tanks, the diameter of the trunks shall be not less than 30 inches.

(R.S. 4417, as amended, 4418, as amended, 4426, as amended, 4453, as amended, secs. 1, 2, 49 Stat. 1544, as amended; 46 U.S.C. 391, 392, 404, 435, 367)

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 68-82, 33 FR 18902, Dec. 18, 1968]

§ 98.25-15 Markings.

(a) Cargo tanks shall be marked in accordance with the requirements of § 54.10-20 of Subchapter F (Marine Engineering) of this chapter.

(b) In addition to the markings required to be stamped on the tank, the legend, "Anhydrous Ammonia" shall be conspicuously and legibly marked upon the dome or upper portion of the tank in letters at least 4 inches high.

(c) All tank inlet and outlet connections, except safety relief valves, liquid level gaging devices and pressure gages shall be labeled to designate whether they terminate in the vapor or liquid space. Labels of noncorrosive material may be attached to valves.

(d) All tank markings shall be permanently and legibly stamped in a readily visible position. If the tanks are lagged, the markings attached to the tank proper shall be duplicated on a corrosion resistant plate secured to the outside jacket of the lagging.

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 68-82, 33 FR 18902, Dec. 18, 1968]

§ 98.25-20 Installation of cargo tanks.

(a) Independent tanks shall be arranged in the vessel so as to provide a minimum clearance of not less than 24 inches from the vessel's side and not less than 15 inches from the vessel's bottom. Where more than one tank is installed in a vessel, the distance between such tanks shall be not less than 15 inches, unless otherwise approved by the Commandant. Alternate provisions may be made for moving such tanks to provide for adequate inspection and maintenance of the vessel's structure and the tanks.

(b) The design shall show the manner in which the tanks are to be installed, supported, and secured in the vessel and shall be approved prior to installation. Tanks shall be supported in steel saddles and securely anchored in place. If the tanks are required to be stress-relieved no appendages shall be welded to the tanks after they have been stress-relieved unless authorized by the Commandant.

(c) Tanks may be located in dry cargo holds or in liquid cargo tanks or may be installed "on deck" or "under deck" with the tank protruding above deck. On installations where a portion of the tank extends above the weather deck, provision shall be made to maintain the weathertightness of the deck, except that vessels operating on protected inland waters may have tanks located in the holds of hopper type barges without the watertightness of the deck being maintained. All tanks shall be installed with the manhole opening and fittings located above the weather deck.

(d) The anhydrous ammonia tanks may be installed in the bulk liquid cargo tanks provided the liquid surrounding the enclosed anhydrous ammonia tanks complies with the following chemical and physical properties:

(1) Boiling point above 125° F. at atmospheric pressure.

(2) Inert to ammonia at 100° F. at atmospheric pressure.

(3) Noncorrosive in the liquid and vapor phase to the ammonia tanks and piping.

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 70-10, 35 FR 3711, Feb. 25, 1970]

§ 98.25-30 Lagging.

(a) Lagged tanks shall be covered with an incombustible insulation material of a thickness to provide a thermal conductance of not more than 0.075 B.t.u. per square foot per degree F. differential in temperature per hour. The insulating material shall be of an approved type complying with the requirements of Subpart 164.009 of Subchapter Q (Specifications) of this chapter, and shall be given a vapor proof coating with fire retardant material acceptable to the Commandant. Tanks exposed to the weather shall have the insulation and vapor proof coating covered with a removable sheet metal jacket of not less than 0.083 inch thickness and flashed around all openings so as to be weather tight. Materials other than sheet metal may be used to cover the insulation and vapor proof coating when specifically authorized by the Commandant.

(b) Where unlagged tanks are installed in insulated holds or insulated 'tween deck spaces, such tanks shall be considered lagged provided the thermal conductance of the insulation is not less than that required by paragraph (a) of this section.

§ 98.25-35 Refrigerated systems.

(a) Where refrigerated systems are installed to maintain the temperature of the liquid below atmospheric, at least two complete refrigeration plants automatically regulated by pressure variations within the tanks shall be provided, each to be complete with the necessary auxiliaries for proper operation. The capacity of each refrigeration compressor shall be sufficient to maintain the vapor pressure in the tanks during the peak atmospheric temperature conditions below the pressure for which the tanks are designed.

(b) An alternate arrangement may consist of three compressors, any two of which shall be capable of maintaining the vapor pressure in the tanks during peak atmospheric temperature conditions below the pressure for which the tanks are designed, the third compressor acting as a stand-by unit.

(c) Refrigerated tanks shall be insulated in conformance with the requirements of § 98.25-30.

§ 98.25-40 Valves, fittings, and accessories.

(a) All valves, flanges, fittings and accessory equipment shall be of a type suitable for use with anhydrous ammonia and shall be made of steel, or malleable or nodular iron meeting the requirements of § 56.60-1 of Subchapter F (Marine Engineering) of this chapter. Valves shall be fitted with noncorrosive material suitable for ammonia service. Valves, flanges, and pipe fittings shall be of the square or round tongue and groove type or raised-face, United States of America Standard 300-pound standard minimum, fitted with suitable soft gasket material. Welded fittings shall be used wherever possible and the number of pipe joints shall be held to a minimum. Screwed joints are not permitted for pipe diameters exceeding 2 inches. Nonferrous materials, such as copper, copper alloys and aluminum alloys, shall not be used in the construction of valves, fittings or accessory equipment. Brazed joints are prohibited.

(b) Each tank shall be provided with the necessary fill and discharge liquid and vapor shut-off valves, safety relief valves, liquid level gaging devices, thermometer well and pressure gage, and shall be provided with suitable access for convenient operation. Connections to tanks installed below the weather deck shall be made to a trunk or dome extending above the weather deck. Connections to the tanks shall be protected against mechanical damage and tampering. Other openings in the tanks, except as specifically permitted by this part, are prohibited.

(c) All connections to the tanks, except safety devices and liquid level gaging devices, shall have manually operated shut-off valves located as close to the tank as possible.

(d) Excess flow valves where required by this section shall close automatically at the rated flow of vapor or liquid as specified by the manufacturer. The piping, including valves, fittings and appurtenances, protected by an excess flow valve, shall have a greater capacity than the rated flow of the excess flow valve.

(e) Liquid level gaging devices which are so constructed that outward flow of tank contents shall not exceed that passed by a No. 54 drill size opening, need not be equipped with excess flow valves.

(f) Pressure gage connections need not be equipped with excess flow valves if the openings are not larger than No. 54 drill size.

(g) Excess flow valves may be designed with a bypass, not to exceed a No. 60 drill size opening, to allow equalization of pressure.

(h) Prior to disconnecting shore lines, the pressure in the liquid and vapor lines shall be relieved through suitable valves installed at the loading header.

(i) Relief valves shall be fitted in liquid lines which may be subject to excessive pressure caused by liquid full condition, and the escape from the relief valves shall be piped to the venting system.

(j) The pressure gage shall be located at the highest practical point. The thermometer well shall terminate in the liquid space and be attached to the shell by welding with the end of the fitting being provided with a gas-tight screwed plug or bolted cover.

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 68-82, 33 FR 18902, Dec. 18, 1968; CGFR 70-10, 35 FR 3712, Feb. 25, 1970]

§ 98.25-45 Liquid level gaging device.

(a) Each tank shall be fitted with a liquid level gaging device of suitable design to indicate the maximum level to which the tank may be filled with liquid at temperatures between 20° F. and 130° F.

(b) Liquid level gaging devices shall be of the following types: magnetic, rotary tube, slip tube, fixed tube, automatic float, or other types acceptable to the Commandant.

(c) Gaging devices that require bleeding of the product to the atmosphere, such as rotary tube, fixed tube, and slip tube, shall be so designed that the bleed valve maximum opening is not larger than a No. 54 drill size, unless provided with an excess flow valve.

(d) Gaging devices shall have a design pressure of at least 250 pounds per square inch.

(e) Gage glasses of the columnar type are prohibited.

§ 98.25-50 Filling and discharge pipes.

(a) Filling connections shall be provided with one of the following:

(1) Combination back pressure check valve and excess flow valve;

(2) One double or two single back pressure check valves; or

(3) A positive shut-off valve in conjunction with either an internal back pressure check valve or an internal excess flow valve.

(b) All other liquid and vapor connections to tanks, except filling connections, safety relief valves, and liquid level gaging devices and pressure gages described in § 98.25-40(e) and (f) shall be equipped with automatic excess flow valves; or in lieu thereof, may be fitted with quick closing internal stop valves, which, except during filling and discharge operations, shall remain closed. The control mechanism for such valves shall be provided with a secondary remote control of a type acceptable to the Commandant.

(c) The excess flow, internal stop or back pressure check valves shall be located on the inside of the tank or outside where the piping enters the tank. In the latter case, installation shall be made in such a manner that any undue strain will not cause breakage between the tank and the excess flow or internal stop valve.

(d) Where the filling and discharge are made through a common nozzle at the tank, and the connection is fitted with a quick-closing internal stop valve as permitted in paragraph (b) of this section, the back pressure check valve or excess flow valve is not required, provided, however, a positive

shut-off valve is installed in conjunction with the internal stop valve.

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 70-10, 35 FR 3712, Feb. 25, 1970]

§ 98.25-55 Cargo piping.

(a) Piping shall be of seamless steel meeting the requirements of § 56.60-1 of Subchapter F (Marine Engineering) of this chapter. The piping shall be of not less than Schedule 40 thickness. In case of piping on the discharge side of the liquid pumps or vapor compressors, the design shall be for a pressure of not less than the pump or compressor relief valve setting; or if the piping is not fitted with relief valves, the design pressure shall not be less than the total discharge head of the pump or compressor.

(b) Where necessary, provision shall be made for expansion and contraction of piping by means of seamless steel pipe expansion bends. Special consideration will be given for packless type expansion joints. Slip type expansion joints are prohibited. Piping shall be provided with adequate support to take the weight of the piping off the valves and fittings.

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 68-82, 33 FR 18902, Dec. 18, 1968]

§ 98.25-60 Safety relief valves.

(a) Each tank shall be fitted with two or more approved safety relief valves, designed, constructed, and flow-tested for capacity in conformance with Subpart 162.018 of Subchapter Q (Specifications) of this chapter.

(b) Each safety relief valve shall start to discharge at a pressure not in excess of the design pressure of the tank.

(c) Safety relief valves shall be attached to the tank near the highest point of the vapor space. Shutoff valves shall not be installed between the tanks and the safety relief valves, except manifolds for mounting multiple safety relief valves may be fitted with acceptable interlocking three-way valves so arranged at all times as to permit at any position of the three-way valve, an unrestricted flow of vapors through at least one port. When two safety relief valves are mounted in parallel on both the upper outlets of the three-way valve, the arrangement shall be such as to permit at least one safety relief valve to be operative at all times.

(d) Each safety valve shall be tested in the presence of a marine inspector at the site of installation before or after mounting prior to being placed in service. The tests shall prove that the safety relief valve will start to discharge at a pressure not in excess of the maximum allowable pressure of the tank.

[CGFR 68-82, 33 FR 18902, Dec. 18, 1968]

§ 98.25-65 Filling density.

(a) The filling density, or the percent ratio of the liquefied gas that may be loaded in the tank to the weight of the water the tank will hold at 60° F., shall not exceed 56 percent for unlagged tanks and 58 percent for lagged or refrigerated tanks.

§ 98.25-70 Venting.

(a) Except as provided in paragraph (b) of this section, each safety valve installed on a cargo tank shall be connected to a branch vent of a venting system which shall be constructed so that the discharge of gas will be directed vertically upward to a point at least 10 feet above the weather deck or the top of any tank or house located above the weather deck.

(b) The capacity of branch vents or vent headers shall depend upon the number of cargo tanks connected to such branch or header as provided in Table 98.25-70(b).

TABLE 98.25-70(b)—CAPACITY OF BRANCH VENTS OR VENT HEADERS

Number of cargo tanks	*Percent of total valve discharge*
1 or 2	100
3	90
4	80
5	70
6 or more	60

(c) In addition to the requirement specified in paragraph (b) of this section, the size of the branch vents or vent headers shall be such that the back pressure in relief valve discharge

lines shall not be more than 10 percent of the safety relief valve setting.

(d) Return bends and restrictive pipe fittings are prohibited. Vents and headers shall be so installed as to prevent stresses on safety relief valve mountings.

(e) When vent discharge risers are installed, they shall be so located as to provide protection against physical damage and be fitted with loose raincaps.

(f) No shut-off valve shall be fitted in the venting system between the safety relief valve and the vent outlets. Suitable provision shall be made for draining the venting system if liquid can collect therein.

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 70-10, 35 FR 3712, Feb. 25, 1970; 35 FR 6431, Apr. 22, 1970]

§ 98.25-75 Ventilation.

(a) All enclosed spaces containing cargo tanks fitted with bottom outlet connections shall be provided with mechanical ventilation of sufficient capacity to assure a change of air every 3 minutes. Where cargo tanks are fitted with top outlet connections, the enclosed spaces containing such tanks shall be fitted with efficient natural or mechanical ventilation.

(b) Enclosed compartments in which machinery such as cargo pumps or vapor compressors are located shall be adequately ventilated.

§ 98.25-80 Cargo hose.

(a) Cargo hose fabricated of seamless steel pipe with swivel joints, wire braided armored rubber or other hose material acceptable to the Commandant, shall be fitted to the liquid or vapor lines during filling and discharging of the cargo tanks.

(b) Hose subject to tank pressure shall be designed for a bursting pressure of not less than five times the maximum safety relief valve setting of the tank.

(c) Hose subject to discharge pressure of pumps or vapor compressors shall be designed for a bursting pressure of not less than five times the pressure of setting of the pump or compressor relief valve.

(d) Before being placed in service, each new cargo hose, with all necessary fittings attached, shall be hydrostatically tested by the manufacturer to a pressure of not less than twice the maximum pressure to which it may be subjected in service. The hose shall be marked with the maximum pressure guaranteed by the manufacturer.

§ 98.25-85 Electrical bonding.

(a) Each cargo tank shall be electrically grounded to the hull. The cargo vessel shall be electrically connected to the shore piping prior to connecting the cargo hose. This electrical connection shall be maintained until after the cargo hose has been disconnected and any spillage has been removed.

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 70-10, 35 FR 3712, Feb. 25, 1970]

§ 98.25-90 Special operating requirements.

(a) Repairs involving welding or burning shall not be undertaken on the cargo tanks or piping while anhydrous ammonia in either the liquid or vapor state is present in the system.

(b) During the time anhydrous ammonia is laden in the tanks the vessel shall be under constant surveillance.

(c) Authorization from the Commandant (MHM) shall be obtained to transport lading other than anhydrous ammonia in the cargo tanks.

(d) Sufficient hose stations shall be installed with adequate water supply so that if leakage of anhydrous ammonia occurs the vapors may be removed by use of a stream of water.

(e) (1) At least two units of approved self-contained breathing apparatus, one stowed forward of the cargo tanks and one stowed aft of the cargo tanks, shall be carried on board the vessel at all times.

(2) All approved self-contained breathing apparatus, masks and respiratory protective devices shall be of types suitable for starting and operating at the temperatures encountered, and shall be maintained in good operating condition.

(3) Personnel involved in the filling or discharge operations shall be adequately trained in the use of the equipment.

(4) For all self-propelled cargo vessels, during filling or discharge oper-

ations every person on the vessel shall carry on his person or have close at hand at all times a canister mask approved for ammonia; or each person shall carry on his person a respiratory protective device which will protect the wearer against ammonia vapors and provide respiratory protection for emergency escape from a contaminated area which would result from cargo leakage. This respiratory protective equipment shall be of such size and weight that the person wearing it will not be restricted in movement or in the wearing of lifesaving device.

(f) While fast to a dock, a vessel during transfer of bulk cargo shall display a red flag by day or a red light by night, which signal shall be so placed that it will be visible on all sides. When at anchor, a vessel during transfer of bulk cargo shall display a red flag by day, which signal shall be so placed that it will be visible on all sides.

[CGFR 70-10, 35 FR 3712, Feb. 25, 1970]

§ 98.25-95 Tests and inspections.

(a) Each cargo tank shall be subjected to an internal examination at least once in each 8 calendar years. To the extent and if deemed necessary by the marine inspector, sufficient insulation shall be removed from insulated tanks at least once in each 8 calendar years to permit spot external examination of the tanks and insulation. The marine inspector may require that the thickness of the tanks be gaged by an acceptable nondestructive means without removal of insulation. An external examination of unlagged tanks and the visible parts of lagged tanks shall be made at each biennial inspection.

(b) A hydrostatic test of 1½ times the maximum allowable pressure as determined by the safety relief valve setting shall be made at any time that the inspector considers such hydrostatic test necessary to determine the condition of the tank. If the jacket and lagging are not removed during the hydrostatic tests prescribed in this paragraph, the tank shall hold the hydrostatic test pressure for at least 20 minutes without a pressure drop.

(c) The safety relief valves shall be popped in the presence of a marine inspector by either liquid, gas or vapor pressure at least once every four years to determine the accuracy of adjustment and, if necessary, shall be reset.

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 67-86, 32 FR 17622, Dec. 9, 1967]

Subpart 98.30—Handling and Stowage of Portable Tanks

AUTHORITY: R.S. 4472, as amended (46 U.S.C. 170), Sec. 201, 86 Stat. 427 (46 U.S.C. 391a), sec. 6(b)(1), 80 Stat. 937 (49 U.S.C. 1655(b)(1)); 49 CFR 1.46(b) and (o)(4).

SOURCE: CGD 73-172, 39 FR 22954, June 25, 1974, unless otherwise noted.

§ 98.30-1 Applicability.

This subpart prescribes regulations for the loading, carrying, handling and stowing, and transfer of products to or from portable tanks—

(a) Designed, constructed, and marked in accordance with the requirements in Part 64 of this chapter which are authorized to be carried on board vessels under §§ 30.01-5, 70.05-30, and 90.05-35 of this chapter; and

(b) Constructed, marked, and maintained in accordance with the requirements in Subpart 98.35 of this chapter, which are authorized to be carried on board vessels under §§ 30.01-5, 70.05-30, and 90.05-35 of this chapter.

§ 98.30-3 Vessels carrying portable tanks

Except to complete a voyage, no person may operate a vessel to which this subpart applies unless each portable tank on board—

(a) Contains the information required in—

(1) Section 64.53(b) of this chapter and—

(i) An inspection date that is within 12 months before the month during which the vessel is operated. The inspection date must be on a metal tag in accordance with § 64.79(b) of this chapter;

(ii) An inspection date that is within 30 months before the month during which the vessel is operated. The inspection date must be stenciled in accordance with § 64.81(b) of this chapter; and

(iii) A hydrostatic test date that is within 60 months before the month

during which the vessel is operated. The inspection date must be stenciled in accordance with § 64.83(b) of this chapter;

(2) Section 64.85(b) of this chapter; or

(3) Section 64.85(a) of this chapter including a periodic test and inspection date that is within 48 months before the month during which the vessel is operated. The inspection date must be stamped in accordance with § 98.35–15(a), and

(b) Is approved for the carriage of the following combustible liquids or dangerous articles:

(1) Grade D.
(2) Grade E.
(3) Acetone.
(4) Alcohol.
(5) Ethyl methyl acetone.
(6) Toluol (toluene).
(7) Xylol (xylene).
(8) Benzene (benzol).
(9) Gasoline.
(10) Hydrochloric—hydrofluoric acid mixtures containing not more than 2 percent hydrofluoric acid.
(11) Sulfuric acid of concentrations 65.25 percent or greater provided the corrosive effect on steel measured at 100° F is not greater than that of 65.25 percent sulfuric acid.
(12) Sulfuric acid concentration not to exceed 51 percent, if the tank is rubber-lined.

§ 98.30–5 Lifting a portable tank.

No person may lift a portable tank with another portable tank.

§ 98.30–7 Smoking.

No person may smoke within 50 feet of a portable tank on the deck on which the tank is stowed.

§ 98.30–9 Portable tank stowage.

(a) No person may operate a vessel to which this subpart applies unless each portable tank is stowed on an open deck.

(b) No person may stow a portable tank—

(1) In the vicinity of another tank that contains a chemically incompatible product; and

(2) Unless all electrical equipment is explosion-proof or intrinsically safe, as defined in § 111.80–5 of this chapter, in the area of the tank and its associated equipment that is—

(i) Within 10 feet in any horizontal direction; and

(ii) Within 8 feet above the deck.

§ 98.30–11 Cargo pumps.

No person may operate a cargo pump to transfer a product to or from a portable tank unless the pump is installed—

(a) Above deck; or

(b) Below deck, in conformance with Subpart 32.60 of this chapter.

§ 98.30–13 Ground connection.

No person may transfer an inflammable or combustible product to or from a vessel unless—

(a) The portable tank and its pumping equipment is electrically grounded to the hull of the vessel; and

(b) The vessel is electrically grounded to an offshore platform, shore piping, or another vessel by a—

(1) Cargo hose constructed with an integral grounding wire if the end connections are used for electrical continuity; or

(2) Separate grounding that is maintained until the cargo hose is disconnected and drained.

§ 98.30–15 Leakage containment.

(a) No person may transfer a product to or from a vessel unless there is a container or enclosed deck area that meets the requirements of this section under or around each transfer connection area.

(b) Each container or enclosed deck area must hold, in all conditions of vessel list or trim to be encountered during the transferring operation, 5 gallons or more and must have a means of draining or removing any leakage without mixing incompatible products or discharging into the water.

§ 98.30–17 Qualifications of person in charge.

No person may serve, and the operator of a vessel may not use the services of a person, as a person in charge of the transfer of a product to and from a portable tank unless—

(a) On self-propelled tank vessels, he holds a valid license authorizing service on inspected vessels as a master, mate, pilot, or engineer;

(b) For tank barges, he holds a valid license authorizing service on inspected vessels as a master, mate, engineer, or is a tankerman certificated for the grade of cargo carried;

(c) For vessels other than tank vessels that are required by this chapter to have a licensed officer on board, he holds a valid license as a master, mate, pilot, or engineer;

(d) For other inspected vessels not specified in paragraphs (a), (b), and (c) of this section he holds a valid tankerman's endorsement on a merchant mariner's document; or

(e) For foreign vessels he holds a license or certificate authorizing service on that vessel as a master, mate, pilot, engineer, or operator.

§ 98.30-19 Supervision by person in charge.

(a) No person may connect, top off, disconnect, or engage in any other critical product transfer operation unless the person in charge designated in § 98.30-17, personally supervises the operation.

(b) No person may start the flow of a product to or from a portable tank unless instructed to do so by the person in charge.

(c) No person may transfer a product to or from a portable tank unless the person in charge is in the immediate vicinity of the transfer operation and immediately available to the person transferring the product.

§ 98.30-21 Inspection prior to transfer.

No person may transfer to or from a portable tank a product with a flashpoint of less than 300° F unless the person in charge of the transfer determines that—

(a) Each warning signal and sign required in §§ 98.30-33 and 98.30-35 is displayed;

(b) No repair work in the vicinity of any portable tank is done without permission of the person in charge of the transfer operation; and

(c) Riveting, welding, burning, or a similar operation is not done in the vicinity of a portable tank unless an inspection by the person in charge of the transfer ensures that the operation can be done safely.

§ 98.30-23 Requirements for transfer; general.

No person may transfer a product to or from a portable tank unless—

(a) The vessel's moorings are strong enough to hold in all expected conditions of surge, current, and weather and are long enough to allow adjustment for changes in draft, drift, and tide during the transfer operation;

(b) Transfer hoses or loading arms are long enough to allow the vessel to move the limits of its mooring without placing strain on the hose, loading arm, or transfer piping system;

(c) Each transfer hose is supported in a manner that prevents strain on its coupling;

(d) Each part of the transfer system necessary to allow the flow of the product is lined up for the transfer;

(e) Each transfer hose has no loose covers, kinks, bulges, soft spots, and no gouges, cuts, or slashes that penetrate the hose reinforcement;

(f) Each coupling meets the requirements of § 98.30-27;

(g) Each scupper or drain in a discharge containment system is closed;

(h) The person in charge of the transfer operations on the transferring vessel or facility and the person in charge of the transfer operations on the receiving vessel or facility have held a conference, to ensure that each person in charge understands—

(1) The identity of the product to be transferred;

(2) The sequence of transfer operations;

(3) The transfer rate;

(4) The name or title and location of each person participating in the transfer operation;

(5) Particulars of the transferring and receiving systems;

(6) Critical stages of the transfer operations;

(7) Federal, state, and local rules that apply to the transfer of dangerous articles and combustible liquids;

(8) Emergency procedures;

(9) Discharge containment procedures;

(10) Discharge reporting procedures;
(11) Watch or shift arrangement; and
(12) Transfer shutdown procedures;
(i) The person in charge of the transfer operations on the transferring vessel or facility and the person in charge of transfer operations on the receiving vessel or facility agree to begin the transfer operations; and
(j) Each person in charge required in this subpart is present.

§ 98.30-25 Requirements for transfer; cargo handling system.

No person may transfer a product to or from a portable tank unless the cargo handling system meets the requirements in Subpart F of Part 64 of this chapter.

§ 98.30-27 Connections.

(a) Each person who makes a connection for a transfer operation shall—
(1) Use suitable material in joints and couplings to make a tight seal;
(2) Use a bolt in at least every other hole and in no case less than four bolts in each temporary connection utilizing an American National Standards Institute (ANSI) standard flange coupling;
(3) Use a bolt in each hole of couplings other than ANSI standard flange couplings;
(4) Use a bolt in each hole of each permanently connected flange coupling;
(5) Use bolts of the same size in each bolted coupling; and
(6) Tighten each bolt and nut uniformly to distribute the load.
(b) No person who makes a connection for a transfer operation may use any bolt that shows signs of strain or is elongated or deteriorated.
(c) No person may use a connection for transfer operations unless it is—
(1) A bolted or full threaded connection; or
(2) A quick-connect coupling accepted by the Coast Guard.

§ 98.30-29 Piping incompatible products.

No person may pipe a portable tank with another tank that contains a chemically incompatible product.

§ 98.30-31 Conditions for pumping.

No person may start pumping a product to or from a portable tank or if started, continue to pump if—
(a) There is an electrical storm;
(b) A fire occurs—
(1) On the deck;
(2) On the vessel;
(3) In the vicinity; or
(c) The cargo hose ruptures or leaks.

§ 98.30-33 Warning signals.

(a) If the vessel is moored, no person may transfer to or from a portable tank a product with a flashpoint of less than 300° F unless the person in charge displays a—
(1) Red flag by day; and
(2) Red electric lantern by night.
(b) If the vessel is at anchor, no person may transfer to or from a portable tank a product with a flashpoint of less than 300° F unless the person in charge displays a red flag.
(c) The signal required in paragraphs (a) and (b) of this section must be visible on all sides of the vessel.

§ 98.30-35 Warning sign at gangway.

If a vessel is moored, no person may transfer to or from a portable tank a product with a flashpoint of less than 300° F unless the person in charge displays at each gangway or access that is open for use a warning placard containing the following in letters 2 inches in height or larger:

WARNING

No open lights

No smoking

§ 98.30-37 Firefighting requirements.

No person may lift a portable tank on or off a vessel, or transfer a product with a flashpoint of less than 300° F to or from a portable tank unless—
(a) Water pressure is maintained on the firemain;
(b) Firehoses, fitted with a Coast Guard approved combination nozzle, are attached to each fire hydrant in the vicinity of the portable tanks;
(c) Except as provided in § 98.30-39, fire extinguishers of a dry chemical type are—

(1) Located to protect the deck area 10 feet in any horizontal direction from each portable tank and its associated cargo handling system;

(2) Coast Guard approved; and

(3) Capable of covering the deck area without being moved;

(d) In a deck area of 500 square feet or less, there are 2 or more dry chemical fire extinguishers of 300 pounds or more total capacity of extinguishing agent; and

(e) In a deck area of more than 500 square feet, there are 3 or more dry chemical fire extinguishers of 450 pounds or more total capacity of extinguishing agent.

§ 98.30-39 Alternate fire extinguishing system.

An alternative to the fire extinguishing system required in § 98.30-37(c) may be approved in accordance with procedures contained in Subpart 90.15 of this chapter.

Subpart 98.35—Portable Tanks Constructed Before October 1, 1974 That Carry Combustible Liquids

§ 98.35-1 Scope.

(a) This subpart contains the requirements for the construction, testing, loading, and discharging of a portable tank for the carriage of combustible liquids that is constructed before October 1, 1974. The regulations apply to portable tanks which are capable of being lifted in a loaded condition on and off the vessel. The portable tanks may be filled ashore and then loaded aboard the vessel, or the portable tanks may be loaded and/or discharged after the portable tanks are secured aboard the vessel.

(b) The provisions of this subpart apply to United States' flag vessels subject to the regulations in this chapter and to all foreign vessels when such vessels are on the navigable waters of the United States, its territories and possessions, but not including the Panama Canal Zone, and which have on board combustible liquid cargo in portable tanks other than in drums, barrels or other packages.

(c) Foreign vessels from countries having similar or equivalent rules or regulations for the design, construction, testing and inspection of portable tanks containing combustible liquids may have such tanks inspected and certified by their own Governments, and such tanks will be considered as meeting such requirements in this subpart; however, such vessels shall comply with §§ 98.35-25, and 98.35-30 regarding location and stowage, firefighting equipment, and special operating requirements during the transfer of cargo or during the lifting of portable tanks on or off the vessel.

(d) Special consideration may be given to the approval of existing portable tanks which have been authorized prior to March 1, 1963, by the Coast Guard for use on vessels. The Interstate Commerce Commission's approved tank cars and tank trucks (for flammable liquids) and specification ICC-51 portable tanks are accepted as meeting the provisions of this subpart. Except for the ICC containers, all existing portable tanks shall otherwise meet the requirements for testing, inspection, and marking as set forth in this subpart for new tanks.

(e) The regulations covering the transportation in portable tanks of combustible liquids defined as Class B or C poisons are contained in Part 146 of Subchapter N (Dangerous Cargoes) of this chapter.

(f) Each portable tank constructed and maintained in accordance with the requirements contained in this Subpart may continue in service until October 1, 1984.

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 66-33, 31 FR 15288, Dec. 6, 1966; CGD 73-172, 39 FR 22955, June 25, 1974]

§ 98.35-3 Authorization for commodities.

(a) General authorization is hereby given for the carriage of the following combustible liquids on board a vessel in portable tanks constructed before October 1, 1974 which conform to the requirements of this subpart:

(1) Combustible liquids having a flash point exceeding 150° F. by an open cup test. Combustible liquids defined as hazardous articles in § 146.27-1 of this chapter are not included.

(2) Paraffinic hydrocarbons.

(b) The shipper or the carrier shall obtain authorization from the Commandant (MHM) for all other combustible liquids before they may be transported in portable tanks.

[CGFR 71-96, 36 FR 19161, Sept. 30, 1971, as amended by CGD 73-172, 39 FR 22956, June 25, 1974]

§ 98.35-5 Definitions.

(a) A portable tank, within the meaning of this subpart, is a cargo tank having a capacity greater than 110 gallons and which is independent of the vessel's structure. (See § 90.05-30 of this subchapter for interpretive rulings on portable containers.)

(b) The term "combustible liquids" shall mean any liquid having a flashpoint above 80° F. (as determined in an open-cup tester, as used for test of burning oils).

§ 98.35-7 Plan approval.

(a) Plans in quadruplicate showing the details of construction of portable tanks shall be submitted to the Commandant (MHM), U.S. Coast Guard, 1300 "E" Street NW., Washington, D.C., 20591, for approval.

(b) The plans may be submitted directly to field technical offices.

(1) Commander, 3d Coast Guard District (mmt), 45 Broadway, New York, N.Y., 10006, for the geographical area covered by 1st, 3d and 5th Coast Guard Districts.

(2) Commander, 8th Coast Guard District (mmt), Room 308, Customhouse, New Orleans, La., 70130, for geographical area covered by 2d, 7th and 8th Coast Guard Districts.

(3) Commander, 12th Coast Guard District (mmt), 630 Sansome St., San Francisco, Calif., 94501, for geographical area covered by 11th, 12th, 13th, 14th, and 17th Coast Guard Districts.

(c) A manufacturer desiring to construct a portable tank or tanks which are identical with a portable tank previously approved by the Commandant (mmt) shall not be required to submit plans, but shall submit to the Officer in Charge, Marine Inspection, a certificate that the proposed portable tank conforms in every respect with the plans previously approved. Such certificate shall include the manufacturer's serial number, the drawing number or numbers, and the date of approval. If, upon examination, the Officer in Charge, Marine Inspection, ascertains that the said approved plans meet the current requirements of this subpart, the manufacture of such portable tank(s) shall be authorized.

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 67-86, 32 FR 17622, Dec. 9, 1967]

§ 98.35-10 Construction.

(a) Portable tanks shall be designed to be lifted on and off the vessel with contents or otherwise moved from place to place as a normal part of the vessel's operation.

(b) Gravity type portable tanks intended for "on deck" stowage only shall be designed for a head of liquid to the top of the vent, but in no case less than 4 pounds per square inch. Pressure vessel type portable tanks intended for stowage below the weather deck shall be designed for a pressure of not less than 30 pounds per square inch in addition to the head of the liquid. In addition to the internal pressure and liquid head, tanks and handling arrangements shall be designed to withstand the static and dynamic stresses imposed by support and handling operations. Portable tanks designed for pressures exceeding 10 pounds per square inch shall meet the requirements for unfired pressure vessels in Subchapter F (Marine Engineering) of this chapter. When portable tanks are intended for tiering or cellular loading, the structural support shall be designed to carry the stresses due to external loading.

(c) Portable tanks having a horizontal length or width of over 15 feet shall be fitted with a swash bulkhead for each 15 feet of either dimension. Where considered necessary for stability in handling, additional swash bulkheads may be required. The openings in swash bulkheads shall be small enough to effectively prevent surging of the liquid contents.

(d) Each portable tank shall be fitted with not less than a 15-inch by 23-inch or an 18-inch diameter manhole located on the top of the tank. Special consideration may be given to approval of portable tanks which meet

applicable ICC specifications with respect to access openings.

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGD 73-172, 39 FR 22956, June 25, 1974]

§ 98.35-13 Venting.

(a) Gravity type portable tanks intended for on deck stowage only shall be fitted with gooseneck vents and corrosion resistant flame screens, or with approved pressure-vacuum relief valves set to relieve at pressures not in excess of 4 pounds per square inch.

(b) Pressure vessel type portable tanks intended for on deck stowage only shall be fitted with gooseneck vents and corrosion resistant flame screens, or with approved pressure-vacuum relief valves, or with approved spring loaded relief valves and vacuum relief valves. The settings of all relief valves shall be not more than the design pressure of the tank.

(c) Pressure vessel type portable tanks intended for stowage below the weather deck shall be fitted with an approved vacuum relief valve and with an approved spring-loaded relief valve set at a pressure of not less than 30 pounds per square inch but not in excess of the design pressure of the tank.

(d) The size of all fittings prescribed in paragraphs (a), (b), and (c) of this section shall be not less than the size of the filling line, but in no case less than 2½ inches nominal pipe size. All venting fittings shall be attached at or near the highest point in the vapor space.

(e) Pressure vessel type portable tanks must have supplemental pressure-relieving devices to protect against excessive pressure due to unexpected sources of external heat such as fire. Such supplemental pressure-relieving devices must be capable of preventing the pressure from rising more than 20 percent above the maximum allowable working pressure of the vessel. The minimum required relief capacity is determined by the formula prescribed in § 54.15-25(c) of this chapter. Pressure vessel type portable tanks approved under the authority of this subpart before January 1, 1972, need not comply with the venting requirements specified in this paragraph.

[CGFR 65-50, 30 FR 17022, Dec. 30, 1965, as amended by CGFR 71-96, 36 FR 19161, Sept. 30, 1971]

§ 98.35-15 Markings.

(a) Each portable tank shall be fitted with a permanent nameplate containing the following:

_____

(Name and address of owner)

_____

(Name and address of manufacturer)
Capacity————(U.S. gals.)
Date built————(Month, year)
Maximum filling capacity————(U.S. gals.)
Maximum design weight———lbs.
Light weight———lbs.
Design pressure———p.s.i.
Test pressure———p.s.i.
Initial inspection———(Date)
By————(Initials of C.G. inspector)
Manufacturer's serial number————
Tank material————
Periodic testing————(Date and initials of C.G. inspector)
Periodic testing————
Periodic testing————

(b) The material for the nameplate shall be of corrosion resistant metal.

(c) The data shall be legibly stamped or embossed and shall not be obliterated during the life of the portable tank. The nameplate shall be maintained in a legible condition so that the data can be easily read.

(d) Portable tanks shall be marked with the legend "COMBUSTIBLE LIQUID." Such legend shall be of letters not less than 3 inches high on a contrasting background and shall be displayed in a conspicuous location on the portable tank when combustible liquids or vapors are carried therein. When commodities other than paraffinic hydrocarbons are carried, additional markings to indicate the exact material contained in the tank shall be provided.

(e) Pressure vessel type portable tanks designed in accordance with § 98.35-10, vented in accordance with § 98.35-13(c), and specifically approved for stowage below the weather deck in accordance with § 98.35-25(c), shall be marked with the legend "SUITABLE FOR

STOWAGE BELOW DECKS." The lettering shall comply with the details of paragraph (d) of this section.

§ 98.35-20 Mounting, lifting and securing arrangements.

(a) *General.* Suitable base, lifting and securing arrangements to withstand service conditions shall be provided.

(b) *Securing devices.* Positive acting securing devices in sufficient number to immobilize the tank unit during any intended passage shall be provided. Due regard shall be given to the dynamic loads imposed by the motion of the vessel while in a seaway. The securing devices shall be sufficient in number and arranged in such a manner that no lashings other than those directly connected to hooks, lugs or padeyes will be necessary.

(c) *Mountings.* (1) Tanks shall be designed and fabricated with mountings to provide a secure base in transit. Skids, saddles, or similar devices shall be deemed to comply with this requirement.

(2) All tank mountings such as skids, fastenings, brackets, cradles, lifting lugs, etc., intended to carry loadings shall be permanently secured to tanks, and shall be designed to withstand static loadings in any direction equal to 1.5 times the weight of the tank and attachments when filled with the lading, using a safety factor of not less than four, based on the ultimate strength of the material to be used.

(3) Lifting lugs or hold-down lugs may be attached to either the tank or tank mountings. If lifting lugs and hold-down lugs are attached directly to the tank, they shall be attached to doubling plates welded to the tank and located at points of support; except that lifting lugs or hold-down lugs with integral bases serving as doubling plates may be welded directly to the tank.

(4) All tank mountings shall be designed so as to prevent the concentration of excessive loads on the tank shell.

§ 98.35-25 Handling and stowage.

Each portable tank must be handled and stowed in accordance with the requirements contained in Subpart 98.30 of this part.

[CGD 73-172, 39 FR 22956, June 25, 1974]

§ 98.35-27 Outage.

(a) Sufficient outage shall be provided to prevent the tank from being liquid full at any time, but in no case shall the outage be less than 5 percent for portable tanks intended for on deck stowage and not less than 8 percent for portable tanks intended for stowage below the weather deck.

§ 98.35-30 Firefighting requirements.

The firefighting requirements are contained in §§ 98.30-37 and 98.30-39.

[CGD 73-172, 39 FR 22956, June 25, 1974]

§§ 98.35-35—98.35-40 [Reserved]

§ 98.35-45 Initial tests.

(a) Before being placed in service, each portable tank shall be subjected to a hydrostatic test in the presence of a Coast Guard inspector.

(b) For gravity type cargo tanks, the test head pressure shall be not less than the design head pressure prescribed in § 98.35-10(b). For pressure vessel type cargo tanks, the hydrostatic test shall be made at a pressure not less than one and one-half times the design pressure of the tank or the safety relief valve setting, and shall otherwise be conducted in accordance with the testing and inspection requirements for unfired pressure vessels in Subchapter F (Marine Engineering) of this chapter.

(c) It shall be demonstrated by test of a prototype tank of a particular design prior to initial use, that such tank, when loaded at the maximum design weight and with the lifting arrangements provided, has a behavior when lifted which is stable and controllable. This demonstration test shall be made either in the presence of a Coast Guard inspector or by a testing agency acceptable to the Commandant for this purpose.

§ 98.35-50 Periodic tests and inspections.

(a) At least once every 4 years each portable tank shall be subjected to a hydrostatic test to the test pressure as

shown on the nameplate, which shall be made in the presence of a Coast Guard inspector. At such time, the tank shall also be internally examined.

(b) No repairs or alterations affecting the safety of the portable tank shall be made without the prior knowledge of the Officer in Charge, Marine Inspection. Notice shall be in accordance with § 91.45-1 of this subchapter. An inspection either general or partial depending upon the circumstances shall be made whenever any important repairs or alterations are undertaken. The Officer in Charge, Marine Inspection, may subject the portable tank to the periodic tests as prescribed in paragraph (a) of this section prior to placing such tank back into service.

PART 99—SPECIAL CONSTRUCTION, ARRANGEMENT, AND OTHER PROVISIONS FOR NUCLEAR VESSELS

Subpart 99.01—Application

Sec.
99.01-1 General.

Subpart 99.05—Design and Construction

99.05-1 Special requirements.
99.05-5 Subdivision and stability.
99.05-10 Location of nuclear system components.

Subpart 99.10—Inspection and Certification

99.10-1 Annual inspection and certification required.
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Subpart 99.15—Other Special Provisions

99.15-1 Radiation.
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99.15-5 Atomic Energy Commission safety requirements.
99.15-10 Safety Assessment.

Subpart 99.20—Operations

99.20-1 Operating Manual.
99.20-5 Special operating procedures.

AUTHORITY: R.S. 4405, as amended, 4462, as amended, sec. 2, 23 Stat. 118, as amended, secs. 2, 633, 63 Stat. 496, 545, sec. 6(b)(1), 80 Stat. 938; 46 U.S.C. 375, 416, 2, 14 U.S.C. 2, 633, 49 U.S.C. 1655(b); 49 CFR 1.4(a)(2), (f). R.S. 4399, as amended, 4400, as amended, 4417, as amended, 4417a, as amended, 4418, as amended, 4421, as amended, 4426-4431, as amended, 4433, as amended, 4434, as amended, 4453, as amended, 4472, as amended, 4483, as amended, 4491, as amended, sec. 14, 29 Stat. 690, as amended, sec. 10, 35 Stat. 428, as amended, 41 Stat. 305, as amended, secs. 1, 2, 49 Stat. 1544, 1545, as amended, sec. 17, 54 Stat. 166, as amended, sec. 3, 54 Stat. 347, as amended, sec. 3, 70 Stat. 152, sec. 3, 68 Stat. 675; 46 U.S.C. 361, 362, 391, 391a, 392, 399, 404-409, 411, 412, 435, 170, 481, 489, 366, 395, 363, 367, 526p, 1333, 390b, 50 U.S.C. 198; E.O. 11239, July 31, 1965, 30 FR 9671, 3 CFR, 1965 Supp., unless otherwise noted.

SOURCE: CGFR 68-82, 33 FR 18902, Dec. 18, 1968, unless otherwise noted.

Subpart 99.01—Application

§ 99.01-1 General.

(a) The provisions of this part shall apply to all installations, systems, and components thereof, utilizing nuclear energy for propulsion or for any other purpose. They shall include vessels handling substantial quantities of radioactive materials other than cargo.

Subpart 99.05—Design and Construction

§ 99.05-1 Special requirements.

(a) The features described in this section shall be provided in nuclear vessels regardless of length or gross tonnage.

(b) A temporary and final source of emergency power, as required for oceangoing passenger vessels over 1,600 gross tons, shall be provided to insure an uninterrupted power supply to nuclear instrumentation, control, and safety systems. For applicable requirements see § 112.05-5(a) of Subchapter J (Electrical Engineering) of this chapter.

(c) Bilge system arrangements, as required for self-propelled oceangoing passenger vessels over 300 feet, shall be provided. For applicable requirements see §§ 56.50-50 and 56.50-55 of Subchapter F (Marine Engineering) of this chapter.

(d) The boundary bulkheads and decks separating the reactor compartment, other compartments containing vital primary system equipment, nu-

clear chemistry laboratories, and reactor control spaces from accommodations, galley, main pantries, and machinery spaces requiring fixed type extinguishing systems shall be of A-60 construction. For definition of Class A-60 construction, see Subpart 72.05 of Subchapter H (Passenger Vessels) of this chapter.

(e) The provisions of Subpart 92.07 of this subchapter shall apply to all vessels regardless of gross tonnage.

§ 99.05-5 Subdivision and stability.

(a) Watertight subdivision and damage stability requirements shall satisfy not less than a two-compartment standard. Whenever practicable they should be at least equivalent to that required for a conventionally powered oceangoing passenger vessel of similar size, capacity, and tonnage.

(b) A full double bottom shall be provided, regardless of the actual length of the vessel, as required by Subpart 73.25 of Subchapter H (Passenger Vessels) of this chapter for vessels over 249 feet in length.

(c) In assessing stability, direct calculations shall be utilized which take into account the form and proportions of the hull. The details of such calculations shall be in accordance with the provisions of Parts 73 and 74 of Subchapter H (Passenger Vessels) of this chapter except that subdivision and damage stability calculations will be based on the most severe permeability assumptions applicable to each compartment, having regard for its actual use.

§ 99.05-10 Location of nuclear system components.

(a) The location of the nuclear system components in the vessel and the manner in which they are supported shall be approved by the Commandant. In determining the location and the necessary structural support and protection required, the effects of grounding, collision or other mishap resulting in holing of the vessel shall be considered.

(b) Reactor installations, including all potentially vulnerable primary system components, shall be placed as far inboard from the shell as practicable. Generally, the installation shall be situated inboard of a vertical surface perpendicular to the waterplane. The vertical surface shall be located at a minimum distance (measured at right angles to the centerline at the deepest loadline) inboard of the shell equal to one-fifth of the extreme breadth of the vessel. If the installation extends outboard of this vertical surface, special consideration shall be given to collision protection.

(c) Reactor installations shall be located a reasonable height above the ship's bottom, but in no case shall this height be less than the required double bottom height. Waste storage tanks and engineered safeguard systems may be permitted in the double bottom space if specifically approved by the Commandant. Consideration shall be given to collision-analysis statistics with regard to the longitudinal (fore and aft) location of the reactor installation.

Subpart 99.10—Inspection and Certification

§ 99.10-1 Annual inspection and certification required.

(a) Every nuclear vessel subject to the regulations in this subchapter shall be inspected by the U.S. Coast Guard at least annually to ascertain that the hull, nuclear systems, machinery, equipment, appliances, etc., of the vessel comply with the applicable regulations in this chapter.

(b) Every nuclear vessel found to be in compliance with applicable requirements in this subchapter will be issued a certificate of inspection in accordance with Part 91 of this subchapter.

§ 99.10-5 Additional requirements.

(a) In addition to the requirements for inspection, test, overhaul and repair specified in this subchapter, nuclear vessels may be subject to such additional requirements as may be prescribed by the Commandant for inspection, test, overhaul and repair. For applicable requirements see Subpart 61.25 of Subchapter F (Marine Engineering) of this chapter.

(b) A prerequisite for annual recertification of the vessel will be a valid Atomic Energy Commission's facility

operating license, or if nonlicensed a certificate from the Atomic Energy Commission stating that the nuclear installation complies with the requirements of the Commission.

§ 99.10–15 International Convention certification.

(a) For applicable requirements governing Safety of Life at Sea Convention certificates see §§ 91.60–30, 91.60–35, and 91.60–40(e) of this subchapter.

Subpart 99.15—Other Special Provisions

§ 99.15–1 Radiation.

(a) The vessel shall be so designed, constructed, and operated that no unreasonable hazard of radiation at sea or in port for crew, food, water supply, passengers, public, or waterways exists.

(b) The Atomic Energy Commission's Standards for Protection Against Radiation, set forth in 10 CFR Part 20, will be the radiation protection standards followed by the U.S. Coast Guard, except as otherwise provided for by law.

§ 99.15–3 Means for preventing uncontrolled release of radiation.

(a) The vessel's nuclear systems, including all components thereof, shall be provided with means for preventing the uncontrolled release of hazardous amounts of radioactive material to normally accessible spaces on the ship or to the ship's environment in the event of accident or malfunction of any such system.

§ 99.15–5 Atomic Energy Commission safety requirements.

(a) Before a Coast Guard certificate of inspection for a nuclear vessel will be issued, it must be shown that the nuclear system meets the safety requirements of the Atomic Energy Commission. After facility licensing, possession of a valid AEC license will attest to this fact. Prior to this licensing, a letter from the Commission to the Coast Guard with assurance that the system does meet the safety requirements of the Atomic Energy Commission is required.

§ 99.15–10 Safety Assessment.

(a) A Safety Assessment shall be prepared to permit evaluation of the nuclear powerplant and safety of the ship, and to ensure that there are no unreasonable radiation or other hazards, at sea or in port, to the crew, passengers or public, or to the waterways or food or water resources.

(b) The Safety Assessment shall be submitted to the Commandant for approval and shall always be kept up-to-date.

(c) The Safety Assessment will be used as a basis for establishing orderly negotiations between the United States and governments of countries which a nuclear vessel intends to visit to permit entry of nuclear ships into ports of different countries.

Subpart 99.20—Operations

§ 99.20–1 Operating Manual.

(a) A fully detailed Operating Manual shall be prepared for the information and guidance of the operating personnel in their duties on all matters relating to the operation of the nuclear powerplant and having an important bearing on safety.

(b) The Operating Manual shall be submitted to the Commandant for approval and shall always be kept up to date.

(c) A copy of the Operating Manual shall be kept on board the vessel at all times.

§ 99.20–5 Special operating procedures.

(a) In addition to the requirements specified in this chapter, all nuclear vessels may be subject to additional requirements governing fueling, startup, and operation.

PART 105—COMMERCIAL FISHING VESSELS DISPENSING PETROLEUM PRODUCTS

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Subpart 105.90—Existing Commercial Fishing Vessels Dispensing Petroleum Products

105.90-1 Existing commercial fishing vessels dispensing petroleum products.

AUTHORITY: R.S. 4405, as amended, 4417a, as amended, 4462, as amended, 4488, as amended, secs. 2, 633, 63 Stat. 496, 545, sec. 6(b), 80 Stat. 938; 46 U.S.C. 375, 391a, 416, 481, 14 U.S.C. 2, 633, 49 U.S.C. 1655(b); 49 CFR 1.4(a)(2), (f), unless otherwise noted.

SOURCE: CGFR 69-53, 34 FR 11265, July 4, 1969, unless otherwise noted.

Subpart 105.01—Administration

§ 105.01-1 Purpose.

The purpose of the regulations in this part is to provide adequate safety in the transporting and handling of inflammable or combustible cargo in bulk on board certain commercial fishing vessels and tenders, as authorized by 46 U.S.C. 391a (Tanker Act; R.S. 4417a), as amended by section 4 of Pub. L. 90-397 (approved July 11, 1968, 82 Stat. 341) and section 6(3) of Pub. L. 93-430 (approved October 1, 1974, 88 Stat. 1183). The regulations in this part set forth minimum requirements for two categories of commercial fishing vessels and tenders which have on board inflammable or combustible cargo in bulk.

(88 Stat. 1183; 49 CFR 1.46(o)(4))

[CGD 75-105, 41 FR 17910, Apr. 29, 1976]

§ 105.01-5 Intent of Pub. L. 90-397 (approved July 11, 1968, 82 Stat. 341) and Pub. L. 93-430 (approved October 1, 1974, 88 Stat. 1180).

(a) Pub. L. 90-397 allowed cannery tenders, fishing tenders, and fishing vessels of not more than 500 gross tons used in the salmon or crab fisheries of the States of Oregon, Washington, and Alaska when engaged exclusively in the fishing industry, to have on board inflammable or combustible cargo in bulk to the extent and upon conditions as might be required by regulations promulgated by the Secretary of the department in which the Coast Guard is operating.

(b) Pub. L. 93-430 allowed vessels of not more than 5000 gross tons used in the processing and assembling of fishery products in the fisheries of the States of Oregon, Washington, and Alaska to have on board inflammable or combustible cargo in bulk to the extent and upon conditions as might be required by regulations promulgated by the Secretary of the department in which the Coast Guard is operating.

(88 Stat. 1183; 49 CFR 1.46(o)(4))

[CGD 75-105, 41 FR 17910, Apr. 29, 1976]

§ 105.01-10 Effective date of regulations.

(a) Amendments, revisions, or additions to the regulations in this part will become effective 90 days after the date of publication in the FEDERAL REGISTER, unless the Commandant directs otherwise.

(b) The regulations in this subchapter are not retroactive in effect unless specifically made so at the time the regulations are issued. Changes in specification requirements of articles of equipment or materials used in construction shall not apply to such items which have been passed as satisfactory until replacement shall become necessary, unless a specific finding is made that such equipment or material used is unsafe or hazardous and has to be removed from vessels.

(88 Stat. 1183; 49 CFR 1.46(o)(4))

[CGFR 69-53, 34 FR 11265, July 4, 1969, as amended by CGD 75-105, 41 FR 17910, Apr. 29, 1976]

Subpart 105.05—Application

§ 105.05-1 Commercial fishing vessels dispensing petroleum products.

(a) The provisions of this part, with the exception of Subpart 105.90, shall apply to all commercial fishing vessels of not more than 500 gross tons used in the salmon or crab fisheries of Oregon, Washington, and Alaska, the construction of which is contracted for on or after December 1, 1969, and all vessels of not more than 5000 gross tons used in the processing and assembling of fishery products in the fisheries of the States of Oregon, Washington, and Alaska, the construction of which is contracted for on or after May 31, 1976 which have or propose to have permanently or temporarily installed tanks or containers for dispensing petroleum products, Grades B and lower flammable or combustible liquids, in bulk in limited quantities.

(b) The provisions of Subpart 105.90 shall apply to all commercial fishing vessels of not more than 500 gross tons used in the salmon or crab fisheries of Oregon, Washington, and Alaska, the construction of which was contracted for prior to December 1, 1969, and all vessels of not more than 5000 gross tons used in the processing and assembling of fishery products in the fisheries of the States of Oregon, Washington, and Alaska, the construction of which is contracted for prior to May 31, 1976 which have or propose to have permanently or temporarily installed tanks or containers for dispensing petroleum products, Grades B and lower flammable or combustible liquids, in bulk in limited quantities.

(88 Stat. 1183; 49 CFR 1.46(o)(4))

[CGFR 69-53, 34 FR 11265, July 4, 1969, as amended by CGD 75-105, 41 FR 17910, Apr. 29, 1976]

§ 105.05-2 Prohibitions regarding petroleum products.

(a) Commercial fishing vessels shall not transport Grade A flammable liquids in bulk. (See § 105.10-15(a) for definition of Grade A flammable liquid.)

(b) On commercial fishing vessels, temporarily installed dispensing tanks or containers shall not be installed or

carried below deck or in closed compartments on or above the deck.

§ 105.05-3 New vessels and existing vessels for the purpose of application of regulations in this part.

(a) *New vessels.* In the application of the regulations in this part, the term "new vessels" means any commercial fishing vessel of not more than 500 gross tons used in the salmon or crab fisheries of Oregon, Washington, or Alaska, the construction of which is contracted for on or after December 1, 1969, and vessels of not more than 5000 gross tons used in the processing and assembling of fishery products in the fisheries of the States of Oregon, Washington, and Alaska, the construction of which is contracted for on or after May 31, 1976.

(b) *Existing vessels.* In the application of the regulations in this part, the term "existing vessels" means any commercial fishing vessel of not more than 500 gross tons used in the salmon or crab fisheries of Oregon, Washington, or Alaska, the construction of which is contracted for prior to December 1, 1969, and vessels of not more than 5000 gross tons used in the processing and assembling of fishery products in the fisheries of the States of Oregon, Washington, and Alaska, the construction of which is contracted for prior to May 31, 1976.

(88 Stat. 1183; 49 CFR 1.46(o)(4))
[CGD 75-105, 41 FR 17910, Apr. 29, 1976]

§ 105.05-5 Types of vessels.

(a) The only types of commercial fishing vessels to which the provisions of this part apply are self-propelled manned vessels with one of the following:

(1) Permanently installed dispensing tanks or containers on open decks.

(2) Permanently installed dispensing tanks or containers located below deck or in closed compartments.

(3) Temporary dispensing tanks or containers installed on open decks.

(88 Stat. 1183; 49 CFR 1.46(o)(4))
[CGD 75-105, 41 FR 17910, Apr. 29, 1976]

§ 105.05-10 Intent of regulations.

(a) The intent of the regulations in this part is to prescribe special requirements for commercial fishing vessels which are otherwise exempt from requirements of vessel inspection, but by reason of occasionally engaging in the service of carrying on board and dispensing liquid inflammable and combustible cargo in bulk are subject to certain requirements of title 46 U.S.C. section 391a.

(b) The application of the regulations governing petroleum products in bulk is limited to that portion of the vessel involved in the storage, carriage, and handling of such products. This shall include, but shall not be limited to:

(1) Permanently or temporarily installed tanks or containers;

(2) Compartments, areas or places where such tanks or containers are placed;

(3) Fuel filling systems;

(4) Fuel venting systems;

(5) Fuel piping and pumping systems.

(c) The regulations in this part also state the manning, crew requirements, and officers for those vessels when required by other specific provisions of law.

(1) Vessels carrying flammable or combustible liquids in bulk are required by section 391a(6)(a) of title 46, U.S.C., to have aboard certificated tankermen.

(2) Vessels of 200 gross tons and upward and operating on the high seas are subject to the Officers' Competency Certificate Convention, 1936, and section 224a of title 46, U.S.C., regarding licensed masters, mates, chief engineers, and assistant engineers.

Subpart 105.10—Definition of Terms Used in This Part

§ 105.10-1 General.

(a) Certain terms used in the regulations in this part are defined in this subpart.

§ 105.10-5 Approved.

(a) The term "approved" means approved by the Commandant, U.S. Coast Guard, unless otherwise stated.

§ 105.10-10 Combustible liquid.

(a) The term "combustible liquid" means any liquid having a flashpoint above 80° F. (as determined from an open cup tester, as used for test of burning oils). In the regulations of this part, combustible liquids are referred to by grades, as follows:

(1) *Grade D.* Any combustible liquid having a flashpoint below 150° F. and above 80° F.

(2) *Grade E.* Any combustible liquid having a flashpoint of 150° F. or above.

(R.S. 4472, as amended (46 U.S.C. 170); sec. 201, 86 Stat. 427, as amended (46 U.S.C. 391a); sec. 6(b)(1), 80 Stat. 937 (49 U.S.C. 1655(b)(1)); 49 CFR 1.46 (b), (t), (n)(4))

[CGFR 69-53, 34 FR 11265, July 4, 1969, as amended by CGD 73-96, 42 FR 49025, Sept. 26, 1977]

§ 105.10-15 Flammable liquid.

(a) The term "flammable liquid" means any liquid which gives off flammable vapors (as determined by flashpoint from an open cup tester, as used for test of burning oils) at or below a temperature of 80° F. Flammable liquids are referred to by grades as follows:

(1) *Grade A.* Any flammable liquid having a Reid [1] vapor pressure of 14 pounds or more.

(2) *Grade B.* Any flammable liquid having a Reid [1] vapor pressure under 14 pounds and over 8½ pounds.

(3) *Grade C.* Any flammable liquid having a Reid [1] vapor pressure of 8½ pounds or less and a flashpoint of 80° F. or below.

(R.S. 4472, as amended (46 U.S.C. 170); sec. 201, 86 Stat. 427, as amended (46 U.S.C. 391a); sec. 6(b)(1), 80 Stat. 937 (49 U.S.C. 1655(b)(1)); 49 CFR 146 (b), (t), (n)(4))

[CGFR 69-53, 34 FR 11265, July 4, 1969, as amended by CGD 73-96, 42 FR 49025, Sept. 26, 1977]

§ 105.10-20 Pressure vacuum relief valve.

(a) The term "pressure vacuum relief valve" means any device or assembly of a mechanical, liquid, weight, or other type used for the automatic regulation of pressure or vacuum in enclosed places.

§ 105.10-25 Commercial fishing vessel.

(a) The term "commercial fishing vessel" includes fishing vessels, cannery tenders, fishing tender vessels, and vessels processing or assembling fishery products.

(88 Stat. 1183; 49 CFR 1.46(o)(4))

[CGD 75-105, 41 FR 17910, Apr. 29, 1976]

Subpart 105.15—Inspection Required

§ 105.15-1 General.

(a) Before a commercial fishing vessel may be used to transport combustible or flammable liquids in bulk in limited quantities for the purpose of dispensing those liquids, the vessel shall be inspected by the Coast Guard to determine that the vessel is in substantial compliance with the requirements in this part.

(b) A vessel with permanently installed cargo tanks shall be inspected biennially, or more frequently if necessary, by the Coast Guard to determine that the vessel is maintained in substantial compliance with the requirements in this part.

(c) A vessel with temporarily installed cargo tanks or containers shall be inspected annually, or more frequently if necessary, by the Coast Guard.

(d) Vessels while laid up or dismantled or out of commission are exempt from any or all inspections required by law or regulations in this part.

§ 105.15-5 Authority of marine inspectors.

(a) Marine inspectors may at any time lawfully inspect any vessel subject to the requirements in this part.

§ 105.15-10 Application for inspection.

(a) Prior to the commencement of the construction of a new vessel, or a conversion of a vessel to a commercial fishing vessel, intended for transporting combustible or flammable liquids in bulk in limited quantities for the purpose of dispensing those liquids, the owners, master, or agent shall submit an application for inspection and a letter of compliance to an Offi-

[1] American Society of Testing Materials Standard D-323 (most recent revision), Method of Test for Vapor Pressure of Petroleum Products (Reid Method).

cer in Charge, Marine Inspection, at any Marine Inspection Office, U.S. Coast Guard.

(b) Application for inspection and renewal of letter of compliance of a vessel shall be made in writing by the master, owner, or agent to an Officer in Charge, Marine Inspection, at any Marine Inspection Office, U.S. Coast Guard.

(c) The application for inspection and letter of compliance shall be on Form CG-3752 or in letter form and set forth the following information:

(1) Vessel's name;

(2) Nature of employment and route or areas in which to be operated;

(3) Date and place where the vessel may be inspected;

(4) Date and place where the vessel was last inspected (if inspected); and,

(5) That application for inspection has not been made to any other Officer in Charge, Marine Inspection.

§ 105.15-15 Letter of compliance.

(a) When a vessel has been inspected and found to be in substantial compliance with the requirements of this part, a "letter of compliance" shall be issued to the vessel by the Officer in Charge, Marine Inspection.

(b) The letter of compliance shall permit the presence on board of liquid flammable or combustible cargoes in bulk, and describe the conditions governing the transportation and dispensing of such cargoes.

(c) The letter of compliance shall state the maximum amount of liquid flammable or combustible cargo in bulk to be carried on board.

(d) The letter of compliance shall be limited to a period of validity which shall not exceed 2 years. For cause, the letter of compliance may be suspended or revoked as authorized by law or regulations in this chapter.

§ 105.15-20 Exhibition of letter of compliance.

(a) On every vessel subject to this part, the original letter of compliance shall be framed under glass or other suitable transparent material and posted in a conspicuous place protected from the weather.

Subpart 105.20—Specific Requirements—Cargo Tanks

§ 105.20-1 Plans and/or sketches.

(a) The owners, master, or agent of a commercial fishing vessel shall submit with his application for the initial inspection a brief description and the plans and/or sketches of the cargo tanks and piping systems for filling and dispensing cargo; dimensions and identifications of material shall be included.

(b) If cargo tanks will be located in enclosed compartments or below decks, the plans and/or sketches shall also show the proposed ventilation system.

(c) Plans and/or sketches are not required if the cargo tanks and piping systems have previously been accepted by the Coast Guard.

§ 105.20-3 Cargo tanks.

(a) *Construction and Materials.* (1) The cargo tanks must be constructed of iron, steel, copper, nickel alloy, copper alloy; or aluminum. The tanks shall be designed to withstand the maximum head to which they may be subjected, except that in no case shall the thickness of the shell or head be less than that specified in this subparagraph. Tanks of over 150 gallons capacity shall have a minimum thickness as indicated in Table 105.20-3(a)(1):

TABLE 105.20-3(a)(1)

Material	A.S.T.M. specification (latest edition)	Thickness in inches and gage number [2] [3]
Nickel copper	B127, hot rolled sheet or plate.	0.107 (USSG 12).
Copper nickel [1]	B122, Alloy No. 5.	0.128 (AWG 8).
Copper [1]	B152, Type ETP	0.182 (AWG 5).
Copper silicon [1]	B97, Alloys A, B, and C.	0.144 (AWG 7).
Steel or iron		0.179 (MSG 7).
Aluminum [4]	B209, Alloy	[5] 5086 0.250 (USSG 3).

[1] Tanks fabricated with these materials shall not be utilized for the carriage of diesel oil.

[2] The gage numbers used in this table may be found in many standard engineering reference books. The letters "USSG" stand for "U.S. Standard Gage" which was established by the act of Mar. 3, 1892 (15 U.S.C. 206) for sheet and plate iron and steel. The letters "AWG" stand for "American Wire Gage" (or Brown and Sharpe Gage) for nonferrous sheet thicknesses. The letters "MSG" stand for "Manufacturers' Standard Gage" for sheet steel thicknesses.

[3] Tanks over 400 gallons shall be designed with a factor of safety of four on the ultimate strength of the tank material used with a design head of not less than 4 feet of liquid above the top of the tank.
[4] Anodic to most common metals. Avoid dissimila-metal contact with tank body unless galvanically compatible.
[5] And other alloys acceptable to the Commandant.

(2) All tank joints, connections, and fittings shall be welded or brazed. Tanks with flanged-up top edges will not be acceptable.

(3) All tanks exceeding 30 inches in any horizontal dimension shall be fitted with vertical baffle plates of the same material as the tank. Limber holes at the bottom and air holes at the top of all baffles shall be provided. Tanks constructed of material of greater thickness than minimum requirements and that are reinforced with stiffeners may be accepted without baffles.

(4) An opening fitted with a threaded pipe plug may be used on the bottom of the tank for cleaning purposes.

(b) *Supports.* (1) Tanks shall be adequately supported and braced to prevent movement. The supports and braces shall be insulated from contact with the tank surface with a nonabrasive and nonabsorbent material.

(c) *Fittings.* (1) Filling lines shall be at least 1½ inches standard pipe size and extend to within 1½-pipe diameters of the bottom of the tank.

(2) Suction lines from diesel oil tanks may be taken from the bottom provided a shutoff valve is installed at the tank. Tanks for Grades B and C liquids shall have top suctions only.

(3) Vent lines shall be at least equal in size to the filling lines.

(4) When a cargo tank contains Grades B or C liquids, the vent lines shall be terminated with an approved pressure vacuum relief valve not less than 3 feet above the weather deck. When a cargo tank contains Grades D or E liquids the vent line may be terminated with a gooseneck fitted with flame screen at a reasonable height above the weather deck.

(d) *Hydrostatic tests.* All tanks vented to the atmosphere shall be hydrostatically tested to a pressure of 5 pounds per square inch or 1½ times the maximum head to which they may be subjected in service. A standpipe of 11½ feet in length attached to the tanks may be filled with water to accomplish the 5 pounds per square inch test.

(49 CFR 1.4(b) and 1.46)

[CGFR 69-53, 34 FR 11265, July 4, 1969, as amended by CGD 72-206R, 38 FR 17229, June 29, 1973; CGD 76-061, 41 FR 23401, June 10, 1976]

§ 105.20-5 Piping systems.

(a) Piping shall be copper, nickel copper, or copper nickel having a minimum wall thickness of 0.035"; except that seamless steel pipe or tubing which provides equivalent safety may be used for diesel cargo systems.

(b) Valves shall be of a suitable nonferrous metallic Union Bonnet type with ground seats except that steel or nodular iron may be used in cargo systems utilizing steel pipe or tubing.

(c) Aluminium or aluminum alloy valves and fittings are prohibited for use in cargo lines.

§ 105.20-10 Pumps.

(a) Pumps for cargo dispensing shall be of a type satisfactory for the purpose.

(b) A relief valve shall be provided on the discharge side of pump if the pressure under shutoff conditions exceeds 60 pounds. When a relief valve is installed, it shall discharge back to the suction of the pump.

(c) Where electric motors are installed with dispensing pumps they shall be explosion proof and shall be labeled as explosion proof by Underwriter's Laboratories, Inc., or other recognized laboratory, as suitable for Class I, Group D atmospheres.

§ 105.20-15 Grounding.

(a) All tanks and associated lines shall be electrically grounded to the vessel's common ground.

(b) A grounded type hose and nozzle shall be used for dispensing fuels.

Subpart 105.25—Additional Requirements—When Cargo Tanks Are Installed Below Decks

§ 105.25-1 General requirements.

(a) Cargo tank and piping systems shall be as described in Subpart 105.20.

§ 105.25-5 Compartments or areas containing cargo tanks or pumping systems.

(a) Compartments or areas containing tanks or pumping systems shall be closed off from the remainder of the vessel by gastight bulkheads. Such gastight bulkheads may be pierced for a drive shaft and pump engine control rods if such openings are fitted with stuffing boxes or other acceptable gland arrangements.

§ 105.25-7 Ventilation systems for cargo tank or pumping system compartment.

(a) Each compartment shall be provided with a mechanical exhaust system capable of ventilating such compartment with a complete change of air once in every 3 minutes. The intake duct or ducts shall be of sufficient size to permit the required air change. The exhaust duct or ducts shall be located so as to remove vapors from the lower portion of the space or bilges.

(b) The ventilation outlets shall terminate more than 10 feet from any opening to the interior of the vessel which normally contains sources of vapor ignition. The ventilation fan shall be explosion proof and unable to act as a source of ignition.

§ 105.25-10 Cargo pumping installation.

(a) Cargo pumps shall not be installed in the cargo tank compartment unless the drive system is outside the compartment.

(b) Suction pipelines from cargo tanks shall be run directly to the pump, but not through working or crew spaces of vessel.

§ 105.25-15 Spacings around tanks.

(a) Tanks shall be located so as to provide at least 15" space around tank, including top and bottom to permit external examination.

§ 105.25-20 Shutoff valves required.

(a) Shutoff valves shall be provided in the suction lines as close to the tanks as possible. The valves shall be installed so as to shut off against the flow.

(b) Remote control of this shutoff valve shall be provided where deemed necessary by the marine inspector.

Subpart 105.30—Electrical Requirements

§ 105.30-1 Electrical fittings and fixtures.

(a) In compartments or areas containing tanks or pumps handling other than Grade E petroleum products, no electrical fittings, fixtures, nor electrical equipment shall be installed or used unless approved for a Class I, Group D hazardous location and so labeled by Underwriter's Laboratories, Inc., or other recognized laboratories. (See Subpart 110.10 of Subchapter J (Electrical Engineering) of this chapter for listings of standards.)

(b) All electrical equipment, fixtures and fittings within 10 feet of a vent outlet or a dispensing outlet shall be explosion proof and shall be labeled as explosion proof by Underwriter's Laboratories, Inc., or other recognized laboratory, as suitable for Class I, Group D atmospheres.

§ 105.30-5 Grounding of electrical equipment.

(a) All electrical equipment shall be grounded to the vessel's common ground.

Subpart 105.35—Fire Extinguishing Equipment

§ 105.35-1 General.

(a) In addition to the fire extinguishing requirements in section 526g of title 46, U.S.C., and sections 25.30-1 to 25.30-90, inclusive, in Subchapter C (Uninspected Vessels) of this chapter, or other laws and regulations in this chapter which may be applicable to a particular vessel at least two BII dry chemical or foam portable fire extinguishers bearing the marine type label of the Underwriter's Laboratories, Inc., shall be located at or near each dispensing area.

(b) This equipment shall be inspected prior to issuing a letter of compliance.

§ 105.35-5 Fire pumps.

(a) All vessels shall be provided with a hand operated portable fire pump having a capacity of at least 5 gallons per minute. This fire pump shall be equipped with suction and discharge hose suitable for use in firefighting. This pump may also serve as a bilge pump.

(b) A power-driven fire pump shall be installed on each vessel of more than 65 feet in length overall.

(1) The power fire pump shall be self-priming and of such size as to discharge an effective stream from a hose connected to the highest outlet.

(2) The minimum capacity of the power fire pump shall be 50 gallons per minute at a pressure of not less than 60 pounds per square inch at the pump outlet. The pump outlet shall be fitted with a pressure gage.

(3) The power fire pump may be driven off a propulsion engine or other source of power and shall be connected to the fire main. This pump may also be connected to the bilge system so that it can serve as either a fire pump or a bilge pump.

§ 105.35-10 Fire main system.

(a) All vessels required to be provided with a power-driven fire pump shall also be provided with a fire main system including fire main, hydrants, hose, and nozzles.

(b) Fire hydrants, when required, shall be of sufficient number and so located that any part of the vessel may be reached with an effective stream of water from a single length of hose.

(c) All piping, valves, and fittings shall be in accordance with good marine practice and suitable for the purpose intended.

§ 105.35-15 Fire hose.

(a) One length of fire hose shall be provided for each fire hydrant required.

(b) Fire hose may be commercial fire hose or equivalent of not over 1½-inch diameter or garden hose of not less than ⅝-inch nominal inside diameter. Hose shall be in one piece not less than 25 feet and not more than 50 feet in length.

(c) If 1½ inch diameter fire hose is used after January 1, 1980, each length of hose must:

(1) Be lined commercial fire hose that conforms to Underwriters' Laboratories, Inc. Standard 19 or Federal Specification ZZ-H-451E. A hose that bears the label of Underwriters' Laboratories, Inc. as lined fire hose is accepted as conforming to this requirement; and

(2) Have a combination nozzle approved by the Commandant in accordance with § 162.027-6 of this Chapter.

(d) If garden hose is used, it shall be of a good commercial grade constructed of an inner rubber tube, plies of braided cotton reinforcement and an outer rubber cover or of equivalent material, and shall be fitted with a commercial garden hose nozzle of good grade bronze or equivalent metal.

(e) All fittings on fire hose shall be of brass, copper, or other suitable corrosion resistant metal.

(f) A length of fire hose shall be attached to each fire hydrant at all times.

[CGFR 69-53, 34 FR 11265, July 4, 1969, as amended by CGD 74-60, 41 FR 43151, Sept. 30, 1976]

Subpart 105.45—Special Operating Requirements

§ 105.45-1 Loading or dispensing petroleum products.

(a) A commercial fishing vessel shall have a valid letter of compliance (see Subpart 105.15) on board and shall be in compliance with the requirements therein while dispensing petroleum products.

(b) The loading and/or dispensing of petroleum products from cargo tanks shall be under the supervision of a tankerman.

§ 105.45-5 Galley fires.

(a) Galley fires are normally permitted during cargo transfer operations. However, prior to transferring Grade B or C cargoes, the tankerman shall make an inspection to determine whether in his judgment galley fires may be maintained with reasonable safety during the transfer operations.

§ 105.45–10 Smoking.

(a) Smoking is prohibited during and in the vicinity of the transfer operations. At other times the senior officer on duty shall designate when and where the crew may smoke.

§ 105.45–15 Warning signals and signs.

(a) During transfer of cargo while fast to a dock, a red signal (flag by day and electric lantern at night) shall be so placed that it will be visible on all sides. At all other times of transfer a red flag only shall be displayed.

§ 105.45–20 Warning sign at gangway.

(a) Warning placards shall be kept at hand for display while a vessel is fast to a dock during transfer of cargo, to warn persons approaching the gangway. The placard shall state in letters not less than 2 inches high substantially as follows:

WARNING

No open lights.
No smoking.
No visitors.

Subpart 105.50—Manning Requirements

§ 105.50–1 General.

(a) The letter of compliance issued to a vessel of 200 gross tons and over shall state that such vessels shall comply with the requirements of section 224a of title 46, U.S.C., regarding officers.

(b) The letter of compliance issued to a vessel shall state the minimum number of crew members required to hold a document endorsed as tankerman.

§ 105.50–5 Tankerman.

(a) Every commercial fishing vessel engaged in dispensing petroleum products shall have within its personnel complement a person holding a merchant mariner's document bearing an endorsement as "tankerman", or as "tankerman for commercial fishing vessels only" or a person holding a valid license as master, mate, pilot, or engineer.

Subpart 105.60—Tankerman for Commercial Fishing Vessels Only

§ 105.60–1 Merchant Mariner's Document.

(a) An applicant for a Merchant Mariner's Document endorsed as "tankerman for commercial fishing vessels only", shall make a written application in accordance with Part 12 of Subchapter B (Merchant Marine Officers and Seamen) of this chapter for tankermen.

(b) Except as provided otherwise in this subpart, the same policies, practices and procedures governing merchant mariners documents endorsed as "tankerman" shall apply to such documents endorsed "tankerman for commercial fishing vessels only".

§ 105.60–5 Experience as tankerman required.

(a) In lieu of the evidence of training required by Part 12 of Subchapter B (Merchant Marine Officers and Seamen) of this chapter for tankermen the applicant shall provide a letter of service stating that he has been trained in the loading and discharging of petroleum products from commercial fishing vessels.

§ 105.60–10 Oral or written examination required.

(a) In lieu of the examination required by Part 12 of Subchapter B (Merchant Marine Officers and Seamen) of this chapter for tankermen the applicant shall be given an oral examination or a written examination at his request, concerning the following subjects:

(1) Precautions to be observed to prevent fires and in the extinguishment of fires.

(2) Location, use and care of fire extinguishing equipment.

(3) Safe handling procedures for petroleum products.

(4) Operation and maintenance of fuel handling equipment.

(5) Ventilation of tanks and general knowledge of pressure vacuum valves.

(6) Ventilation of tank and pump spaces.

(7) Lights and signals displayed during transfer operations.

(8) Emergency procedures.

(9) Definitions and/or characteristics of petroleum products Grade B and lower.

(10) The applicant must demonstrate to the satisfaction of the Officer in Charge, Marine Inspection, his knowledge of pollution laws and regulations, procedures for discharge containment and cleanup, and methods for disposal of sludge and waste material from cargo and fueling operations.

(83 Stat. 852 (42 U.S.C. 4321, et. seq.))

[CGFR 69-53, 34 FR 11265, July 4, 1969, as amended by CGD 71-161R, 37 FR 28263, Dec. 21, 1972]

Subpart 105.90—Existing Commercial Fishing Vessels Dispensing Petroleum Products

§ 105.90–1 Existing commercial fishing vessels dispensing petroleum products.

(a) The prohibition in § 105.05–2 shall apply to all commercial fishing vessels.

(b) Existing vessels must meet the following requirements:

(1) Permanently or temporarily installed tanks or containers used for dispensing in limited quantities petroleum products in bulk, Grades B or lower flammable or combustible liquids, shall meet the applicable requirements in Subparts 105.20 (Tanks and piping systems), 105.25 (Cargo tanks below decks), 105.30 (Electrical). However, these tanks or containers and their associated piping systems in use prior to December 1, 1969, if in satisfactory condition in the opinion of the Officer in Charge, Marine Inspection, may be continued in use as long as they are maintained in such satisfactory condition.

(2) Minor repairs or alterations may be made in permanently or temporarily installed tanks or containers for petroleum products in bulk, which shall be to the satisfaction of the Officer in Charge, Marine Inspection. Major repairs or replacement of such tanks or containers shall be in accordance with requirements governing new installations as set forth in this part.

(3) All commercial fishing vessels shall comply with the applicable requirements in Subparts 105.15 (Inspections), 105.35 (Fire extinguishing equipment), 105.45 (Special operating requirements), and 105.50 (Manning requirements).

(88 Stat. 1183; 49 CFR 1.46(o)(4))

[CGFR 69-53, 34 FR 11265, July 4, 1969, as amended by CGD 75-105, 41 FR 17910, Apr. 29, 1976]

SUBCHAPTER I-A—MOBILE OFFSHORE DRILLING UNITS

PART 107—INSPECTION AND CERTIFICATION

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AUTHORITY: Sec. 2, 87 Stat. 418 (46 U.S.C. 86); sec. 3, 82 Stat. 341, as amended (46 U.S.C. 367); R.S. 4405, as amended (46 U.S.C. 375); sec. 10, 35 Stat. 428 (46 U.S.C. 395); R.S. 4423, as amended (46 U.S.C. 400); R.S. 4429, as amended (46 U.S.C. 407); R.S. 4430, as amended (46 U.S.C. 408); 88 Stat. 423 (46 U.S.C. 411); R.S. 4434, as amended (46 U.S.C. 412); R.S. 4462, as amended (46 U.S.C. 416); sec. 1, 73 Stat. 475 (46 U.S.C. 481); sec. 4, 67 Stat. 462 (43 U.S.C. 1333(d)); sec. 6(b)(1), 80 Stat. 937 (49 U.S.C. 1655(b)(1)); 49 CFR 1.46(b) and (n)(6).

SOURCE: CGD 73-251, 43 FR 56802, Dec. 4, 1978, unless otherwise noted.

Subpart A—General

§ 107.01 Purpose of subchapter.

This subchapter prescribes rules for the design, construction, equipment, inspection and operation of mobile offshore drilling units operating under the U.S. flag.

§ 107.111 Definitions.

As used in this subchapter:

"Approved" means approved by the Commandant.

"Column stabilized unit" means a unit with the main deck connected to the underwater hull of footings by columns or caissons.

"Commandant" means the Commandant of the Coast Guard or his authorized representative.

"District Commander" means an officer of the Coast Guard who commands a Coast Guard District described in 33 CFR Part 3 or his authorized representative.

"Headquarters" means Office of the Commandant, U.S. Coast Guard, Washington, D.C. 20590.

"Industrial systems and components" means any machinery or equipment except diving systems on board a mobile offshore drilling unit for use in the industrial function of the unit.

"International service" means operation of a mobile offshore drilling unit on an international voyage or in waters under the jurisdiction of foreign nations or the United Nations.

"Marine inspector" means any person designated by an Officer in Charge, Marine Inspection, as a marine inspector.

"Master" or "Person in charge" means a person designated under § 109.107.

"Mobile offshore drilling unit" or "unit" means a vessel, except a public vessel of the United States, capable of engaging in drilling operations for the exploration or exploitation of subsea resources that is—

(1) Seagoing and 300 or more gross tons and self-propelled by motor;

(2) Seagoing and 100 or more gross tons and non-self-propelled; or

(3) More than 65 feet in length and propelled by steam.

"Non-self-propelled unit" means a unit which is not self-propelled.

"Officer in Charge, Marine Inspection" means an officer of the Coast Guard who commands a Marine Inspection Zone described in 33 CFR Part 3 or his authorized representative.

"Self-elevating unit" means a unit with moveable legs capable of raising its hull above the surface of the sea.

"Self-propelled unit" means a unit that has propulsion machinery that provides for independent underway navigation.

"Surface type unit" means a unit with a ship shape or barge type displacement hull of single or multiple hull construction intended for operation in the floating condition.

"Watertight" means designed and constructed to withstand a static head of water without any leakage, except that "watertight equipment" means enclosed equipment so constructed that a stream of water from a hose (not less than 1 inch in diameter) under head of about 35 feet from a distance of about 10 feet, and for a period of 5 minutes, can be played on the apparatus without leakage.

"Weathertight" means that water will not penetrate into the unit in any sea condition, except that "weathertight equipment" means equipment so constructed or protected that exposure to a beating rain will not result in the entrance of water.

§ 107.113 Industrial personnel.

Industrial personnel are all persons, exclusive of the required crew as set forth in the Certificate of Inspection, carried on board a mobile offshore drilling unit for the sole purpose of carrying out the industrial business or functions of the unit.

§ 107.115 Incorporation by reference.

(a) The standards referred to in this subchapter are incorporated by reference. The incorporation by reference was approved by the Director of the Federal Register under the provisions of 1 CFR Part 51 on November 7, 1978.

(b) The standards are on file in the FEDERAL REGISTER library and are available from the appropriate organizations whose addresses are listed below:

(1) American Bureau of Shipping, 45 Broad Street, New York, New York 10004.

(2) American National Standards Institute Standards (ANSIS), American Society of Mechanical Engineers, 345 East 47th Street, New York, New York 10017.

(3) American Petroleum Institute, 2101 L Street, N.W., Washington, D.C. 20037.

(4) International Cargo Gear Bureau, 17 Battery Place, New York, New York 10004.

(5) National Fire Protection Association, 470 Atlantic Avenue, Boston, Massachusetts 02210.

(6) Underwriters Laboratory, 333 Pfingsten Road, Northbrook, Illinois 60062.

§ 107.117 Coast Guard addresses.

When approval of the Commandant is required under this Subchapter, the following addresses are to be used:

(a) For approval by Commandant (G-MVI)—

Commandant (G-MVI/83), U.S. Coast Guard, Washington, D.C. 20590.

(b) For approval by Commandant (G-MMT)—

Commandant (G-MMT/82), U.S. Coast Guard, Washington, D.C. 20590.

Subpart B—Inspection and Certification

§ 107.201 Purpose.

This subpart prescribes rules for the—

(a) Original inspection and issuance of an original Certificate of Inspection required by 46 U.S.C. 367, 391, 395, and 399;

(b) Biennial inspection for certification and renewal of a Certificate of Inspection required by 46 U.S.C. 367, 391, 395, and 399;

(c) Reinspection required by 46 U.S.C. 435;

(d) Inspection after an accident required by 46 U.S.C. 435; and

(e) Inspection of repairs or alterations, or both, required by 46 U.S.C. 435;

(f) Amendments to Certificates of Inspection;

(g) Issuance of Temporary Certificate of Inspection; and

(h) Issuance of Permit to Proceed to Another Port for Repairs.

§ 107.211 Original Certificate of Inspection.

(a) The owner or builder of a unit applies for an inspection for an original Certificate of Inspection by submitting before construction is started:

(1) A completed Application for Inspection of U.S. Vessel, Form CG-3752, to the Officer in Charge, Marine Inspection, of the marine inspection zone in which the unit is to be constructed; and

(2) Plans and information indicating the proposed arrangement and construction of the unit to the Coast Guard in accordance with Subpart C of this Part.

(b) An original Certificate of Inspection is issued if the Coast Guard finds, during the inspections conducted while the unit is being constructed, that a unit contracted for on or after January 3, 1979 meets § 107.231.

(c) An original Certificate of Inspection is issued if the Coast Guard finds that an uncertificated unit contracted for before January 3, 1979 meets the applicable requirements of this Subchapter as specified in the Navigation and Vessel Inspection Circular, *"Inspection and Certification of Existing Mobile Offshore Drilling Units"* (Appendix A). Existing structure, arrangements, materials, equipment, and facilities will be considered satisfactory so long as they are maintained in good condition to the satisfaction of the Officer in Charge, Marine Inspection. Repairs and minor alterations may be made to the same standards as originally used. Major alterations and conversions shall be in compliance with the provisions of each subpart of this part to the satisfaction of the Officer in Charge, Marine Inspection.

(d) A Certificate of Inspection expires 24 months after the date of issue.

§ 107.215 Biennial inspection for certification.

(a) The master, owner, or agent of a certificated unit may apply for a biennial inspection for the renewal of a Certificate of Inspection by submitting a completed Application for Inspection of U.S. Vessel, Form CG-3752, to the Officer in Charge, Marine Inspection, in or nearest to the port where the inspection will be made.

(b) The master, owner, or agent of a certificated unit operating in international service may apply for renewal of a Certificate of Inspection by submitting a completed Application for Inspection of U.S. Vessel Form CG-3752, to the appropriate Officer in Charge, Marine Inspection, at least 60 days before the expiration date that appears on the unit's unexpired Certificate of Inspection.

(c) A Certificate of Inspection is renewed if the Coast Guard finds, during the biennial inspection, that—

(1) A unit contracted for on or after January 3, 1979 meets the requirements of this Subchapter; or

(2) A unit contracted for before January 3 1979, and issued a Certificate of Inspection under Subchapter I of this Chapter, continues to meet the requirements of that subchapter and meets the applicable requirements of this subchapter as specified in Navigation and Vessel Inspection Circular, *"Inspection and Certification of Existing Mobile Offshore Drilling Units"* (Appendix A).

§ 107.219 Permit to proceed to another port for repairs.

(a) If a unit fails to meet the requirements in § 107.231, and the Coast Guard withholds reissuance of a Certificate of Inspection, or suspends an unexpired Certificate of Inspection, as described in § 107.279, a Permit to Proceed to Another Port for Repairs (Form CG-948) is issued by the Coast Guard if—

(1) The owner, master, person in charge, or agent makes a written request for a permit to the Officer in Charge, Marine Inspection, that includes—

(i) The reason the permit is requested;

(ii) The port in which the repairs are to be made; and

(iii) The period of time for the voyage;

(2) The Officer in Charge, Marine Inspection finds that the unit is seaworthy for the voyage.

(b) A Permit to Proceed to Another Port for Repairs states the conditions under which it was issued and is in force for the period of the voyage to the port in which the repairs are to be made.

§ 107.223 Temporary Certificate of Inspection: period in effect.

A Temporary Certificate of Inspection, issued under 46 U.S.C. 399, is effective until a Certificate of Inspection is issued to the unit.

§ 107.227 Certificate of Inspection Amendment.

The Coast Guard issues a Certificate of Inspection Amendment, Form CG-858, to a certificated unit if a requirement for equipment and data listed on the unexpired Certificate of Inspection is changed.

§ 107.231 Inspection for certification.

A unit is issued a Certificate of Inspection under § 107.211 or § 107.215(c) if the inspector finds the following:

(a) The unit and its equipment comply with—

(1) Part 108 of this subchapter;

(2) Subchapter J of this chapter, Electrical Engineering;[1]

(3) Subchapter F of this chapter, Marine Engineering;[2]

(4) Subchapter E of this chapter, Load Lines;[3]

(5) Part 64 or Part 98 of this chapter, or both, if the unit carries marine portable tanks or portable tanks;

(6) The vessel design and equipment requirements of the oil pollution regulations (33 CFR Part 155, Subpart B);

(7) The Rules of the Road requirements for the waters in which the unit navigates, contained in—

(i) 33 U.S.C. Chapters 3, 4, 5, or 21; and

(ii) 33 CFR Parts 80, 85, 9r 86.

LIFESAVING EQUIPMENT

(b) Each lifeboat and its equipment are serviceable.

(c) Each lifeboat, each lifeboat launching system, and each davit launched liferaft launching system passes the test in § 107.239.

(d) Each winch electrical control apparatus for lifeboats meets the testing requirements in § 107.243.

(e) Each inflatable liferaft is serviceable and meets the servicing requirement in § 160.051-6 of this chapter.

(f) Each hydraulic release for inflatable liferafts meets the periodic servicing and testing requirements in § 160.062-4 of this chapter.

(g) Each life preserver is serviceable.

(h) A life preserver that is cleaned or repaired meets Subpart 160.006 of this chapter.

(i) Each buoyant work vest is serviceable.

FIRE FIGHTING EQUIPMENT

(j) Each hand portable fire extinguisher and each semiportable fire extinguisher is inspected, and serviced if

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[1] Requirements for industrial systems and components are in Subpart 111.94 of this Chapter.

[2] Requirements for industrial systems and components are in Subpart 58.60 of this Chapter.

[3] Requirements for load lines are not applicable to bottom supported units when they are being supported by, or being lowered to or raised from the seabed.

required, in accordance with § 107.235(a).

(k) Each fixed fire-extinguishing system is inspected, and serviced if required, in accordance with § 107.235(b).

(l) Each fire main system meets the testing requirements in § 107.251.

(m) Each fire hose meets the testing requirements in § 107.257.

CRANES

(n) The rated load test for cranes in § 107.260 is met.

(o) Each crane is inspected and tested in accordance with § 107.258.

MISCELLANEOUS

(p) Each watertight door is operative.

(q) Each valve with a remote control is operative.

(r) Each means of escape on the unit is safe for the intended service.

(s) There is not an accumulation of oil which might create a fire hazard on tank tops, decks, in drip pans, machinery spaces, and pumproom bilges.

(t) Each accommodation space is sanitary.

(u) The unit meet the drydocking requirement in § 107.261 or the special examination in § 107.265.

(v) The unit meets the equipment and data information requirements on its certificate of inspection.

(w) Each record in Subpart D of part 109 is maintained as prescribed.

(x) A unit that engages on international voyages has on board the appropriate certificates issued under 47 U.S.C. 360:

(1) Safety Radiotelegraph Certificate or Safety Radiotelephony Certificate.

(2) Exemption Certificate, if an exemption has been granted.

INSTALLATION TESTS

(y) Each lifeboat, lifeboat davit, lifeboat winch, liferaft davit, and liferaft winch meets the installation tests in § 94.35-5(b) of this chapter.

(z) Each davit launched liferaft meets the installation test in § 95.37-5 of this chapter.

(aa) Piping for each carbon dioxide extinguishing system meets the installation test in § 108.449 of this chapter.

(bb) Each sliding watertight door meets the installation tests in § 163.001-6(b) of this chapter.

OTHER TESTS AND INSPECTIONS

(cc) The unit and its equipment meet any other test or inspection deemed necessary by the inspector to determine if they are suitable for the service in which they are to be employed.

§ 107.235 Servicing of hand portable fire extinguishers, semi-portable fire extinguishers and fixed fire-extinguishing systems.

(a) Each hand portable fire extinguisher and each semi-portable fire extinguisher on board the unit must be serviced as setout in Table 107.235 and examined for excessive corrosion and general condition.

TABLE 107.235

Type extinguisher	Test and servicing required
Soda Acid	Discharge, clean hose and inside of extinguisher thoroughly. Recharge.
Foam	Discharge, clean hose and inside of extinguisher thoroughly. Recharge.
Pump Tank (water or antifreeze)	Discharge, clean hose and inside of extinguisher thoroughly. Recharge with clean water or antifreeze.
Cartridge operated (water, antifreeze or loaded stream)	Examine pressure cartridge and replace if end is punctured or if cartridge is otherwise determined to have leaked or to be in unsuitable condition. Remove liquid, clean hose and inside of extinguisher thoroughly. Recharge with clean water, solution, or antifreeze. Insert charged cartridge.
Carbon Dioxide	Weigh cylinders. Recharge if weight loss exceeds 10 percent. Inspect hose and nozzle to be sure they are clear.
Dry chemical (cartridge-operated type)	Examine pressure cartridge and replace if end is punctured or if cartridge is otherwise determined to have leaked or to be in unsuitable condition. Inspect hose and nozzle to see if they are clear. Insert charged cartridge. Be sure dry chemical is free-flowing (not caked) and chamber contains full charge.

TABLE 107.235—Continued

Type extinguisher	Test and servicing required
Dry chemical (stored pressure type)	See that pressure gage is in operating range. If not, or if seal is broken, weigh or otherwise determine that full charge of dry chemical is in extinguisher. Recharge if pressure is low or if dry chemical is needed.

(b) Each fixed fire-extinguishing system must be examined for excessive corrosion and general condition and be serviced by—

(1) Recharging the cylinders of each carbon dioxide system, if the weight loss is more than 10% of the weight of the charge;

(2) Testing each foam system, except premix systems by—

(i) Discharging foam for approximately 15 seconds from a nozzle designated by the marine inspector;

(ii) Discharging water from all other lines and nozzles; and

(iii) Taking a sample of the foam liquid and submitting it to the manufacturer or his authorized representative for determination of its specific gravity, PH, percentage of water dilution, and solid content, and certification as a suitable firefighing foam;

(3) Removing the pressure cartridge of each premix aqueous film forming foam system and replacing the cartridge if the seal is punctured, sampling the premix solution in accordance with the manufacturer's instructions, and replacing cylinders that are discharged.

NOTE: All carbon dioxide cylinders and discharge hoses of semi-portable carbon dioxide systems must be tested and marked in accordance with § 147.04-1 of this Chapter.

§ 107.239 Weight testing of lifeboats, lifeboat launching systems, and davit launched liferaft systems.

(a) Each lifeboat must be loaded to the deadweight equivalent of the allowed capacity, lowered, stopped using the winch brake during descent, lowered into the water by releasing the winch brake, and released from the falls;

(b) The davit and winch for each davit launched liferaft must be tested by suspending a test weight from the releasing hook and lowering the weight to near the water;

(c) The automatic disengaging device for each davit launched liferaft must be tested by a spring weight to assure the applied force at which the hook will release is within the design specification; and

(d) The launching equipment for each lifeboat or davit launched liferaft must be tested with a weight equal to the weight of the lifeboat or raft plus the full complement of persons and equipment.

NOTE: In making these tests, deadweight is equivalent to 165 pounds for each person in the allowed capacity.

§ 107.243 Testing of winch electrical control apparatus for lifeboats.

Each winch electrical control apparatus for lifeboats must be opened and inspected. When the inspection is completed the control apparatus must be operated.

107.251 Testing of the fire main.

Each fire main system must be opened and the pressure checked at—

(a) The most remote outlet; and

(b) The highest outlet.

§ 107.257 Testing of fire hose.

Each fire hose must be subjected to a test pressure equivalent to the maximum pressure to which it may be subjected during operation. However, each fire hose must be subjected to a pressure of at least 100 p.s.i.

§ 107.258 Crane certification.

(a) The Coast Guard may accept current certificates issued by approved organizations as evidence of condition and suitability of cranes. The following organizations are approved by the Coast Guard as crane certifying authorities:

(1) American Bureau of Shipping, 45 Broad St., New York, N.Y., 10004.

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(2) International Cargo Gear Bureau, Inc., 17 Battery Place, New York, N.Y. 10004.

(b) Crane certification must be based upon—

(1) A review of plans submitted under § 107.309; and

(2) The continuing program of tests and inspections in § 107.259.

(c) Each load test and inspection by the certifying authority must be recorded in the unit's Crane Record Book required in § 109.437.

§ 107.259 Crane inspection and testing.

(a) Each crane must be inspected and tested in accordance with Section 3 of the American Petroleum Institute (A.P.I.) *Recommended Practice for Operation and Maintenance of Offshore Cranes,* API RP 2D, First Edition (October 1972) with supplement 1, except that the rated load test must be performed in accordance with § 107.260.

(b) The tests are witnessed and the inspections are conducted by—

(1) A Coast Guard marine inspector; or

(2) The American Bureau of Shipping (A.B.S.), or the International Cargo Gear Bureau, Inc. (I.C.G.B.) for cranes under certification by these organizations.

(c) If the tests and inspections are conducted by the A.B.S. or the I.C.G.B., the surveyor shall certify that the tests and inspections were conducted in accordance with the A.P.I. specification; or modified by § 107.260.

§ 107.260 Rated load test for cranes.

(a) To meet the requirements in § 107.231(n), each crane must meet the following rated load test at both the maximum and minimum boom angles usually employed in material transfers over the side of the unit:

Rated load of assembled gear	Proof load
Less than or equal to 20 tons	25 pct in excess.
Greater than 20 tons but less than or equal to 50 tons.	5 tons in excess.
Greater than 50 tons	10 pct in excess.

(b) The weight of the hook, hook blocks, slings, rib, and other rigging, except the hoist rope, must be considered part of the load for the rated load test.

(c) The rated load test must be performed—

(1) When the crane is installed;

(2) Each 48 months; and

(3) After repairs or alterations to any structural component of the crane.

§ 107.261 Drydock or special examination.

(a) Except as provided in paragraphs (b), (c), and (d), each unit must be drydocked in the presence of a Coast Guard inspector at least once during each 24 month period after it is issued a Certificate of Inspection.

(b) If a unit is column-stabilized, it may be specially examined in lieu of drydocking in accordance with § 107.265 in the presence of a Coast Guard inspector.

(c) If a unit is self-elevating, it may be specially examined in lieu of drydocking in accordance with § 107.267 in the presence of a Coast Guard inspector.

(d) If a unit is a surface type, it may be specially examined in lieu of drydocking in accordance with § 107.265 in the presence of a Coast Guard inspector if the examination is specifically approved by the Commandant.

(e) The master, person in charge, owner, or agent of a certificated unit must notify the appropriate Officer in Charge, Marine Inspection before the unit is drydocked, or specially examined.

(f) The master, person in charge, owner, or agent of a certificated unit operating in international service must notify the appropriate Officer in Charge, Marine Inspection at least 60 days before the unit is drydocked or specially examined under § 107.265 or § 107.267.

§ 107.265 Special examination in lieu of drydocking for column stabilized units or surface type units when specifically approved by the Commandant.

(a) A column stabilized unit, or surface type unit when approved by the Commandant, must be specially examined in accordance with a plan—

(1) Submitted in accordance with paragraph (b); and

(2) Accepted by the Commandant (G-MVI).

(b) To meet the requirements in paragraph (a), the owner or operator of the unit must submit a plan to the Coast Guard that provides the methods used to determine the condition of the hull and that contains the following information:

(1) The planned location where the unit is to be examined.

(2) The draft at which the unit is to be examined.

(3) The names of the diver or diving company selected for the examination.

(4) The method of visual presentation for the examination.

(5) The method used to clean the underwater portion of the hull.

(6) The method and location of gauging the underwater portion of the hull.

(7) The number of underwater hull fittings and number of compartments to be opened.

(8) The underwater high stress areas and the welds in those areas to be examined.

§ 107.267 Special examination in lieu of drydocking for self-elevating units.

(a) A self-elevating unit must be specially examined in accordance with a plan—

(1) Submitted in accordance with paragraph (b); and

(2) Approved by the Commandant (G-MVI).

(b) To meet the requirements in paragraph (a), the owner or operator of the unit must submit a plan to the Commandant (G-MVI) that provides for—

(1) Examination of the unit's hull while it is in the elevated position; and

(2) Examination of the supporting mat, spud cans, or footings while the unit is afloat.

(c) The plan required in paragraph (b) must contain the following information:

(1) The planned location where the unit is to be examined.

(2) The methods to be used to conduct the hull examination.

(3) The method of visual presentation for examination of the underwater components.

(4) The methods of determining the condition of the underwater components.

(5) The underwater high stress areas and the welds in those areas that are to be examined.

(6) The names of the diver or diving company selected for the examination.

§ 107.269 Reinspection.

The Coast Guard reinspects a unit within the period between the 10th and 14th months after the month in which the certificate is issued to determine if the unit meets the requirements in § 107.231, except § 107.231(y), (z), (aa), and (bb).

§ 107.271 Inspection: Alterations.

After plans are approved for alterations affecting the safety of the unit the Coast Guard conducts inspections of the affected—

(a) Hull;

(b) Machinery; or

(c) Equipment.

§ 107.275 Other inspections.

When the Coast Guard receives the report required in § 109.411 or § 109.425, the Coast Guard conducts the following inspections of a unit to determine if the unit meets the requirements under which it was issued its original Certificate of Inspection:

(a) An inspection after an accident.

(b) An inspection after a defect is found that affects—

(1) The seaworthiness of the unit; or

(2) The safety or efficiency of a life-saving device, or firefighting device.

(c) An inspection of repairs made because of an accident or a defect.

§ 107.279 Certificate of Inspection: Failure to meet requirements.

If a unit fails to meet the requirements in § 107.231, the Coast Guard may—

(a) Withhold issuance of an original Certificate of Inspection after an original inspection for certification, until the unit meets the requirements in § 107.231;

(b) Withhold renewal of a Certificate of Inspection after a biennial inspection for certification until the unit

meets the requirements in § 107.231, except § 107.231(y), (z), (aa), and (bb);

(c) Suspend an unexpired Certificate of Inspection after a reinspection, until the unit meets the requirements in § 107.231, except § 107.231(y), (z), (aa), and (bb);

(d) Revoke an unexpired Certificate of Inspection after a reinspection if the unit operates without complying with Coast Guard orders to correct unlawful conditions;

(e) Revoke or suspend an unexpired Certificate of Inspection;

(f) Withhold issuance of a safety equipment certificate;

(g) Withhold renewal of safety equipment certificate;

(h) Suspend an unexpired safety equipment certificate;

(i) Revoke an unexpired safety equipment certificate; and

(j) Withhold, suspend, or revoke an exemption certificate.

Subpart C—Plan Approval

§ 107.301 Purpose.

This subpart prescribes procedures for submitting plans and specifications for plan approval and describes the information that must be submitted.

§ 107.305 Plans and information.

Each applicant for approval of plans must submit three copies of each of the following described plans, specifications, and structural calculations concerning the construction, arrangement, required equipment, and safety features of the unit:

GENERAL

(a) Specifications.

(b) General arrangement plan of decks, holds, inner bottoms, etc. including inboard and outboard profile.

HULL STRUCTURE [1]

(c) *Inner bottom plating and framing.

(d) *Midship section.

(e) *Shell plating and framing.

(f) *Stern, stern frame, and rudder.

(g) *Structural deck plans for strength decks.

(h) *Pillars and girders.

(i) *Watertight and oiltight bulkheads.

(j) *Foundations for main machinery and boilers.

(k) *Arrangement of ports, doors, and airports in shell plating.

(l) *Hatch coamings and covers in weather and watertight decks.

(m) *Details of watertight doors and operating gear.

(n) *Scuppers and drains penetrating shell plating.

(o) Arrangement of cranes.

(p) For self-elevating units, column stabilized units, and units with special hull configuration, structural calculations and plans showing special structural features.

STABILITY

(q) Lines.

(r) Curves of form and cross curves of stability.

(s) Capacity plan showing capacities and vertical, longitudinal, and transverse centers of gravity of stowage spaces.

(t) Tank sounding tables.

(u) Draft mark locations.

(u-1) Intact stability and damage stability data.

FIRE CONTROL

(v) General arrangement plans showing, for each deck, the control stations, fire sections enclosed by fire resisting bulkheads, alarm and extinguishing systems, fire extinguishers, means of access to compartments and other decks, and the ventilation system, including location of ventilation shutdowns, positions of dampers, and the numbers identifying each system.

(w) Ventilation diagram, including dampers and other fire control features.

(x) Details of fire alarm systems.

[1] The asterisk (*) indicates items that are approved by the American Bureau of Shipping for vessels classed by it. Items approved by the American Bureau of Shipping are generally accepted as satisfactory unless the law or Coast Guard regulations contain requirements that are not covered by the American Bureau of Shipping.

(y) Details of fixed fire extinguishing systems.

MARINE ENGINEERING

(z) Plans required for marine engineering equipment and systems by Subchapter F of this chapter.

ELECTRICAL ENGINEERING

(aa) Plans required for electrical engineering equipment and systems by Subchapter J of this chapter.

LIFE SAVING EQUIPMENT

(bb) The location and arrangement of each life saving system including each embarkation deck, showing each overboard discharge, and projections in the way of launching lifeboats and liferafts.

(cc) The weight of each lifeboat when fully equipped and loaded.

(dd) Working loads of davits and winches.

(ee) Types and sizes of falls.

(ff) Manufacturer's name and identification of each item of equipment.

PERSONNEL ACCOMMODATIONS

(gg) Arrangement plans showing each accommodation space, ventilation, and means of escape.

CONSTRUCTION PORTFOLIO [2]

(hh) A construction portfolio must be prepared for each unit and must be approved by the Coast Guard. The portfolio must document the location and extent of application of different grades and strengths of materials and include a description of the materials and welding procedures employed and any other relevant construction information. The portfolio must contain the following:

(1) Structural plans showing areas incorporating different grades and strengths of materials. A simplified plan may be included in the portfolio if it adequately defines the different areas of application.

(2) A list of different grades or strengths of material that conform to American Bureau of Shipping (ABS) or American Society of Testing and Materials (ASTM) specifications. For materials that do not conform to ABS or ASTM specifications, complete specifications, including chemical and physical properties, special testing and any heat treatment.

(3) Each approved weld procedure for the fabrication of each structure using different grades or strengths of material and each approved weld test procedure.

(4) Information, restrictions or prohibitions regarding repairs or modifications.

OPERATING MANUAL

(ii) The operating manual required in § 109.121.

§ 107.309 Crane plans and information.

(a) Three copies of each of the following must be submitted:

(1) Stress and arrangement diagrams, bill of materials, and supporting calculations for all structural components listed in API Spec. 2C, Second Edition, February 1972 (with supplement 2).

(2) Drawings of foundations and substructures with supporting calculations for support and stability of each crane under its rated load.

(3) Plans showing the installation of the safety features required in § 108.601.

(4) Drawings of the means provided to stop motion and set brakes during a power failure.

NOTE: These plans must be submitted to the Coast Guard, if the crane is not certified. If the crane is to be certified, four copies must be sent to the American Bureau of Shipping or the International Cargo Gear Bureau.

(b) In addition to the plans and information required in paragraph (a), the following plans and information must be submitted to the Coast Guard only:

(1) One line diagrams of the electrical power circuits of the electric power crane overload protection required in Subpart 111.50 of this chapter.

(2) Diagrams of the hydraulic or pneumatic power and control systems, as required by Subpart 58.30-40 or 58.30-50 of this chapter, as applicable.

[2] This portfolio may be included in the operating manual required in § 109.121.

§ 107.317 Addresses for submittal of plans, specifications, and calculations.

The copies of each plan, specification, and calculation required under § 107.305 and § 107.309 must be submitted to one of the following as applicable:

(a) The Officer in Charge, Marine Inspection, in the zone in which the unit is to be built or altered.

(b) One of the following field technical offices:

(1) Commander(mmt), 3rd Coast Guard District, Governors Island, New York, NY 10004, for the geographical area covered by the 1st and 3rd Coast Guard Districts.

(2) Commander(mmt), 5th Coast Guard District, Federal Bldg., 431 Crawford St., Portsmouth, VA 23705.

(3) Commander(mmt), 8th Coast Guard District, Hale Boggs Federal Building, 500 Camp Street, New Orleans, LA 70130, for the geographical area covered by the 2nd, 7th, and 8th Coast Guard District.

(4) Commander(mmt), 9th Coast Guard District, 1240 East 9th St., Cleveland, OH 44199.

(5) Commander(mmt), 12th Coast Guard District, 630 Sansome St., San Francisco, CA 94126, for the geographical area covered by the 11th, 12th, 13th, 14th, and 17th Coast Guard Districts.

(c) The American Bureau of Shipping, (ABS) 45 Broad St., New York, NY 10004.

NOTE: For classed vessels, the American Bureau of Shipping will, upon request by the submitter, arrange to forward the plans indicated with an asterisk in § 107.305 to the Coast Guard indicating ABS's action thereon.

(d) International Cargo Gear Bureau, Inc., 17 Battery Place, New York, NY 10004.

Subpart D—Certificates Under International Convention for Safety of Life at Sea, 1960

§ 107.401 Purpose and definition.

(a) The International Convention for Safety of Life at Sea, 1960, requires one or more of the certificates described in this subpart to be carried on self-propelled vessels of 500 gross tons or over engaged in international voyages. This subpart prescribes rules for the issuance of these certificates to mobile offshore drilling units.

(b) "International voyage" has the same meaning as stated in Regulation 2(d) of Part A, Chapter I in the *International Convention for the Safety of Life at Sea, 1960,* June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27 (SOLAS 60), which is: "a voyage from a country to which the present Convention applies to a port outside such country, or conversely; and for this purpose every territory for the international relations of which a Contracting Government is responsible or for which the United Nations are the administering authority is regarded as a separate country." The Coast Guard has interpreted this definition to include the following:

(1) A voyage from a country to which SOLAS 60 applies, to a port outside that country or the reverse;

(2) A voyage from any territory, including the Commonwealth of Puerto Rico, the Canal Zone, all possessions of the United States, and all lands held by the United States, and all lands held by the United States under a protectorate or mandate, whose international relations are the responsibility of a contracting SOLAS 60 government, or which is administered by the United Nations, to a port outside that territory or the reverse;

(3) A voyage between the contiguous states of the United States and the states of Hawaii or Alaska or between the states of Hawaii and Alaska.

The Coast Guard has interpreted this definition to not include a "Great Lakes voyage" which means a voyage solely on the Great Lakes of North America and the St. Lawrence River west of a straight line drawn from Capedes Rosiers to West Point, Anticosti Island and, on the north side of Anticosti Island, the 63rd Meridian.

§ 107.405 Safety Equipment Certificate.

(a) A self propelled unit of at least 500 gross tons that engages in international voyages is issued a safety equipment certificate if the inspector issues it a certificate of inspection under § 107.211 or § 107.215 and it meets

Chapter 3 of the International Convention for the Safety of Life at Sea, 1960, June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27.

(b) A Safety Equipment Certificate expires 24 months after the date of issue.

§ 107.409 Safety Construction Certificate.

(a) Application for a Safety Construction Certificate is made by indicating in the space provided on the Application for Inspection Form CG-3752 whether the American Bureau of Shipping or the Coast Guard is to issue the certificate.

(b) The American Bureau of Shipping or the Coast Guard may issue a self-propelled unit of at least 500 gross tons that engages on international voyages a Safety Construction Certificate if the unit meets the requirements in Regulation 12(a)(ii), Chapter I of the *International Convention for the Safety of Life at Sea, 1960*, June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27.

(c) A Safety Construction Certificate expires 60 months after the date of issue.

(d) If a unit fails to meet the requirements in Regulation 12(a)(ii), the Coast Guard may—

(1) Suspend an unexpired Safety Construction Certificate; and

(2) Revoke an unexpired Safety Construction Certificate.

§ 107.413 Exemption certificate.

(a) An owner or operator of a unit may request an exemption from the requirements of the *International Convention for the Safety of Life at Sea, 1960*, June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27 (SOLAS 60) by writing to the appropriate OCMI.

(b) The Commandant (G-MVI) may exempt a self-propelled unit of at least 500 gross tons on an international voyage from any of the requirements in the *International Convention for the Safety of Life at Sea, 1960*, June 17, 1960, 16 UST 185, TIAS 5780, 536 UNTS 27 (SOLAS 60) if the unit meets the conditions of Regulation 4 of Part A, Chapter I, of SOLAS 60 which states the following:

> A ship which is not normally engaged on international voyages but which, in exceptional circumstances, is required to undertake a single international voyage may be exempted by the Administration from any of the requirements of the present Regulations provided that it complies with safety requirements which are adequate in the opinion of the Administration for the voyage which is to be undertaken by the ship.

(c) The Commandant (G-MVI) may exempt a self-propelled unit of at least 500 gross tons on an international voyage from the requirements of Chapter III (Lifesaving Appliances, & C.) of SOLAS 60 if the unit meets the conditions of Regulation 3 of Chapter III which states in part:

> The Administration, if it considers that the sheltered nature and conditions of the voyage are such as to render the application of the full requirements of this chapter (Chapter III) unreasonable or unnecessary, may to that extent exempt from the requirements of this chapter individual ships or classes of ships which, in the course of their voyage, do not go more than 20 miles from the nearest land. . . .

(d) The Commandant (G-MVI) may exempt a unit from the requirements of Chapter II (Construction) of SOLAS 60 if the unit meets the conditions of Regulation 1(c) of Part A of Chapter II of SOLAS 60 which states the following: The Administration may, if it considers that the sheltered nature and conditions of the voyage are such as to render the application of any specific requirements of this chapter (Chapter II) unreasonable or unnecessary, exempt from those requirements individual ships or classes of ships belonging to its country which, in the course of their voyage, do not proceed more than 20 miles from the nearest land.

(e) An Exemption Certificate is in force for the period of validity of the certificate to which it refers.

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AUTHORITY: Sec. 2, 87 Stat. 418 (46 U.S.C. 86); sec. 3, 82 Stat. 341, as amended (46 U.S.C. 367); R.S. 4405, as amended (46 U.S.C. 375); sec. 10, 35 Stat. 428 (46 U.S.C. 395); R.S. 4423, as amended (46 U.S.C. 400); R.S. 4429, as amended (46 U.S.C. 407); R.S. 4430, as amended (46 U.S.C. 408); 88 Stat. 423 (46 U.S.C. 411); R.S. 4434, as amended (46 U.S.C. 412); R.S. 4462, as amended (46 U.S.C. 416); sec. 1, 73 Stat. 475 (46 U.S.C. 481); sec. 4, 67 Stat. 462 (43 U.S.C. 1333(d)); sec. 6(b)(1), 80 Stat. 937 (49 U.S.C. 1655(b)(1)); 49 CFR 1.46(b) and (n)(6), unless otherwise noted.

SOURCE: CGD 73-251, 43 FR 56808, Dec. 4, 1978, unless otherwise noted.

Subpart A—General

§ 108.103 Equipment not required on a unit.

Each item of lifesaving and firefighting equipment that a unit has in addition to those required by this part must meet the requirements of this subchapter for that item of equipment.

§ 108.105 Substitutes for required fittings, material, apparatus, equipment, arrangements, calculations and tests.

(a) Substitutes for fittings, material, apparatus, equipment, arrangements, calculations, and tests required in this Subchapter may be accepted by the Commandant (G-MMT), if the substitute provides an equivalent level of safety.

(b) In any case where it is shown to the satisfaction of the Commandant that the use of any particular equipment, apparatus, arrangement, or test is unreasonable or impracticable, the Commandant may permit the use of alternate equipment, apparatus, arrangement, or test to such an extent and upon such condition as will insure, to his satisfaction, a degree of safety consistent with the minimum standards set forth in this subchapter.

§ 108.109 Classification society standards.

(a) Any person who desires to use the rules of a classification society, other than the American Bureau of Shipping, to meet requirements in this Subchapter must request recognition of that society from the Commandant (G-MMT). The relevant rules must be submitted with the request.

Subpart B—Construction and Arrangement

HULL STRUCTURE

§ 108.113 Structural standards.

Except as provided in § 108.109, each unit must meet the structural standards of the American Bureau of Shipping's *Rules for Building and Classing Offshore Mobile Drilling Units, 1978.*

§ 108.114 Appliances for watertight and weathertight integrity.

(a) Appliances to ensure watertight integrity include watertight doors, hatches, scuttles, bolted manhold covers, or other watertight closures for openings in watertight decks and bulkheads.

(b) Appliances to ensure weathertight integrity include weathertight doors and hatches, closures for air pipes, ventilators, ventilation intakes and outlets, and closures for other

openings in deckhouses and superstructures.

(c) Each internal opening fixed with appliances to ensure watertight integrity which are used intermittently during operation of the unit while afloat must meet the following:

(1) Each door, hatch, and scuttle must—

(i) Be remotely controlled from a normally manned control station, and be operable locally from both sides of the bulkhead; or

(ii) If there is no means of remote control there must be an alarm system which signals whether the appliance is open or closed both locally at each appliance and in a normally manned control station.

(2) Each closing appliance must remain watertight under the design water pressure of the watertight boundary of which it is a part.

(d) Each external opening fitted with an appliance to ensure weathertight integrity must be located so that it would not be submerged below the final equilibrium waterline if the unit is subjected simultaneously to—

(1) Damage causing flooding described in §§ 108.319 through 108.323; and

(2) A wind heeling moment calculated in accordance with § 108.311 using a wind velocity of 25.8 meters per second (50 knots).

§ 108.115 Sliding watertight doors.

If a unit is equipped with sliding watertight doors, each sliding watertight door must be approved under Subpart 163.001 of Subchapter Q of this chapter.

Fire Protection: General

§ 108.123 Isolation of combustible material.

Each internal combustion engine exhaust, boiler and galley uptake, and similar heat source must be separated or insulated from combustible materials.

§ 108.127 Storage lockers for combustibles.

Each oil and paint locker must be made of steel or an equivalent material or be completely lined with steel or an equivalent material as described in § 108.131(c) of this subpart.

Structural Fire Protection

§ 108.131 Definitions.

(a) "Standard Fire Test" means the test in which specimens of the relevant bulkheads or decks, having a surface of approximately 4.65 square meters (50 square feet) and a height of 2.44 meters (8 feet) resembling as closely as possible the intended construction and including, where appropriate, at least one joint, are exposed in a test furnace to a series of temperature relationships approximately as follows:

(1) At the end of 5 minutes—538°C. (1,000°F.)

(2) At the end of 10 minutes—704°C. (1,300°F.)

(3) At the end of 30 minutes—843°C. (1,550°F.)

(4) At the end of 60 minutes—927°C. (1,700°F.).

(b) Bulkheads and decks are defined and classed as follows:

(1) "A class bulkhead or deck" means a bulkhead or deck that—

(i) Is made of steel or other equivalent material; and

(ii) Prevents the passage of flame and smoke for 60 minutes if subjected to the standard fire test.

(2) "A 60 bulkhead or deck" means an A class bulkhead or deck that—

(i) Is insulated with approved insulation, bulkhead panels, or deck covering;

(ii) If subjected to the standard fire test for 60 minutes, has an average temperature rise on the unexposed side of the insulated bulkhead or deck of less than 139°C. (250°F.) above the temperature before the standard fire test and has a temperature rise at any point on the unexposed surface, including any joint, of less than 180°C. (325°F.) above the temperature before the standard fire test.

(3) "B class bulkhead or deck" means a bulkhead or deck that—

(i) Is made of approved noncombustible material;

(ii) Prevents flame from passing through it for 30 minutes if subjected to the standard fire test.

(4) "C class bulkhead or deck" means a bulkhead or deck made of approved noncombustible material.

(c) "Equivalent material" means a material that by itself or with insulation has smoke and fire retardant properties equal to that of the steel required for "A" or "B" class bulkheads or decks and has structural qualities equivalent to steel at the end of the applicable fire exposure.

(d) "Approved material" means a material approved under one of the following subparts of Subchapter Q of this chapter:

(1) Deck coverings, Subpart 164.006.

(2) Structural insulation, Subpart 164.007.

(3) Bulkhead panel, Subpart 164.008.

(4) Noncombustible materials, Subpart 164.009;

(5) Interior finishes, Subpart 164.012.

(e) "Stairtower" means a stairway that penetrates more than one deck within the same enclosure, or two or more stairways that—

(1) Are arranged vertically one above the other; or

(2) Penetrate both the deck and the overhead within the same enclosure.

(f) "Accommodation space" includes, sleeping, mess, hospital, recreational, toilet, washing and shower spaces, and corridors.

§ 108.133 Hull superstructure, structural bukheads, decks, and deckhouses.

Each hull superstructure, structural bulkhead, deck, and deckhouse must be made of steel or an equivalent material.

§ 108.135 Boundary bulkheads, decks of galleys, and combustible material lockers.

Each boundary bulkhead and deck of each galley, each combination galley and messroom, and each combustible material storage locker must be an A class bulkhead and A class deck respectively.

§ 108.137 Bulkhead and deck separations of accommodation spaces.

Each boundary bulkhead and deck that separates an accommodation space or control station from the following must be an A class bulkhead and A class deck respectively—

(a) Machinery space;

(b) Galley or combination galley and messroom;

(c) Main pantry;

(d) Classified space;

(e) Store room.

§ 108.139 Boundary bulkheads and decks of a space containing emergency power.

Each boundary bulkhead and deck of a space containing an emergency electric power source or components of an emergency electric power source must be an A class bulkhead and A class deck respectively. When separate but adjoining spaces are provided for such equipment, boundary bulkhead type construction is not required for the separating partitions common to each space.

§ 108.141 Boundary bulkheads and decks between the emergency power source and service generators.

Each boundary bulkhead and deck of a space containing an emergency electric power source or components of an emergency electric power source that adjoins a space containing a ship's service generator, the components of a ship's service generator, or a classified space must be an A-60 bulkhead and A-60 deck.

§ 108.143 Accommodation space.

(a) Each corridor bulkhead in an accommodation space must be an A class or B class bulkhead except if an A class bulkhead is specifically required by this Part.

(b) No door in a corridor bulkhead in an accommodation space may have a louver, except that a stateroom, lounge, or recreation room door may have louvers in its lower half.

(c) Each stairtower, elevator, and dumbwaiter, and other trunk must be enclosed by A class bulkheads.

(d) Each bulkhead not described under paragraph (a) of this section must be either A class, B class, or C class bulkheads.

(e) At least one opening to each stairway must be enclosed by either A class or B class bulkheads and doors.

(f) Each stairtower must have doors at all levels and each must be an A class door.

(g) Each door required by paragraphs (e) and (f) of this section—

(1) Must be self-closing;

(2) May not have any means to permanently hold the door open, except for magnetic holdbacks that are operated from the bridge or other remote location.

(h) Interior stairs, including stringers and treads, must be made of steel or an equivalent material.

(i) Except in washrooms and toilet spaces, each deck covering in an accommodation space must be made of an approved material, except an overlay on a deck for leveling or finishing that is not more than 9.375 millimeters (⅜ inch) thick.

(j) Except as provided in paragraph (1), each ceiling, lining, insulation, and pipe and duct lagging in an accommodation space must be made of an approved material that is noncombustible.

(k) Each sheathing, furring, or holding piece used to secure a bulkhead, ceiling, lining, or insulation in an accommodation space must be made of an approved material that is non-combustible.

(l) No bulkhead, lining, or ceiling in an accommodation space may have a combustible veneer greater than 2 millimeters (1/12 inch) in thickness.

(m) Each corridor or hidden space in an accommodation space may be covered by an approved interior finish or a reasonable number of coats of paint. However, no corridor or hidden space may have combustible veneer, trim, or decoration except material approved under Subpart 164.012 of this Chapter.

§ 108.145 Hatches and tonnage openings.

Each hatch, except a hatch between storage spaces and each tonnage opening closure, must be made of steel or an equivalent material of the same class as the bulkhead or deck where the opening occurs.

§ 108.147 Certain paints prohibited.

No nitrocellulose or other highly flammable or noxious fume-producing paint or lacquer may be used on a unit.

Means of Escape

§ 108.151 Two means required.

(a) Each of the following must have at least 2 means of escape:

(1) Each accommodation space with a deck area of at least 27 sq. meters (300 sq. ft.).

(2) Each space, other than an accommodation space, that is continuously manned or used on a regular working basis except for routine security checks.

(3) Weather deck areas where personnel may be normally employed.

(b) When two means of escape are required from a space below the main deck, one the means of escape must provide for a rapid escape through openings that are not required to be watertight by damage stability considerations.

(c) When two means of escape are required from a space above the main deck, one of the means of escape must provide for a rapid escape to a weather deck.

§ 108.153 Location of means of escape.

The required two means of escape must be through exits that minimize the possibility of having both exits blocked if a fire or other casualty occurs in the area.

§ 108.155 Restrictions on means of escape utilized.

A required means of escape may not be a vertical ladder or deck scuttle, except that one of the means of escape may be a vertical ladder or deck scuttle if a stairway would be impracticable.

§ 108.157 Locked doors.

No door to the required means of escape may be designed to lock except—

(a) A crash door or a door that has a locking device that can be easily forced, if on both sides of the door a permanent and easily seen instruction is placed; or

(b) An outside door to a deckhouse if the door can be locked by key only

and if the master or person in charge has control of the key to the door's lock.

§ 108.159 Stairways and exterior inclined ladders.

Each stairway, except a stairway in a machinery or storage space, and each exterior inclined ladder must be at least 70 centimeters (28 inches) wide with an angle of inclination from the horizontal of not more than 50 degrees, except that special consideration may be given to the installation if a 70 centimeters (28 inch) width is impracticable.

§ 108.160 Vertical ladders.

(a) Each vertical ladder must have rungs that are—

(1) At least 41 centimeters (16 inches) in length;

(2) Not more than 30 centimeters (12 inches) apart, uniform for the length of the ladder; and

(3) At least 18 centimeters (7 inches) from the nearest permanent object in back of the ladder.

(b) Except when unavoidable obstructions are encountered, there must be at least 11.5 centimeters (4½ inches) clearance above each rung.

(c) Except as provided in § 108.525(e), each exterior vertical ladder more than 6 meters (20 ft.) in length must be fitted with a cage or ladder safety device meeting ANSI Standard 14.3 (1974) for fixed ladders.

(d) No vertical fixed ladders may be made of wood.

§ 108.161 Dead end corridors.

No dead end corridor may be more than 13 meters (43 feet) long.

§ 108.165 Access to lifeboats and liferafts.

Each unit must be designed to provide direct access to the lifeboat and liferaft embarkation areas.

§ 108.167 Weather deck ladders.

Each unit must have at least one permanent, inclined ladder between each weather deck.

Classified Locations

§ 108.170 Definitions.

(a) Classified locations are those in which flammable hydrocarbon gas or vapors, resulting from the drilling operations, may be present in quantities sufficient to produce an explosive or ignitable mixture. Location of these areas affect the design of the units' machinery, electrical, and ventilation systems. (See notes 1 and 2).

(b) For the purpose of this subpart "semi-enclosed location" means a location where natural conditions of ventilation are notably different from those on open decks due to the presence of structures such as roofs, windbreaks, or bulkheads.

Notes: 1. Hazardous atmospheres are further defined in § 111.80 of this Chapter.

2. For specific requirements for machinery and electrical installations on mobile offshore drilling units see Subchapters "F" and "J" of this Chapter.

§ 108.171 Class I, Division 1 locations.

The following are Class I, Division 1 locations:

(a) An enclosed space that contains any part of the mud circulating system that has an opening into the space and is between the well and final degassing discharge.

(b) An enclosed or semi-enclosed location that is below the drill floor, and contains a possible source of gas release.

(c) An enclosed space that is on the drill floor, and is not separated by a solid, gas-light floor from the spaces specified in paragraph (b).

(d) A space that would normally be considered a Division 2 location under § 108.173 but where combustible or flammable gases might accumulate.

(e) A location in the weather, or a semi-enclosed location, except as provided in paragraph (b) that is within 1.5 m (5 ft.) of the boundary of any—

(1) Equipment or opening specified in paragraph (a);

(2) Ventilation outlet, access, or other opening to a Class I, Division 1 space; or

(3) Gas vent outlet.

(f) Except as provided in § 108.175, an enclosed space that has an opening into a Class I, Division 1 location.

§ 108.173 Class I, Division 2 locations.

The following are Class I, Division 2 locations:

(a) An enclosed space that has any open portion of the mud circulating system from the final degassing discharge to the mud suction connection at the mud pit.

(b) A location in the weather that is—

(1) Within the boundaries of the drilling derrick up to a height of 3 m (10 ft.) above the drill floor;

(2) Below the drill floor and within a radius of 3 m (10 ft.) of a possible source of gas release; or

(3) Within 1.5 m (5 ft.) of the boundaries of any ventilation outlet, access, or other opening to a Class I, Division 2 space.

(c) A location that is—

(1) Within 1.5 m (5 ft.) of a semi-enclosed Class I, Division 1 location indicated in § 108.171(b); or

(2) Within 1.5 m (5 ft.) of a Class I, Division 1 space indicated in § 108.171(e).

(d) A semi-enclosed area that is below and contiguous with the drill floor to the boundaries of the derrick or to the extent of any enclosure which is liable to trap gasses.

(e) A semi-enclosed derrick to the extent of its enclosure above the drill floor or to a height of 3 m (10 ft.) above the drill floor, whichever is greater.

(f) Except as provided in § 108.175 an enclosed space that has an opening into a Class I, Division 2 location.

§ 108.175 Contiguous locations.

An enclosed space that has direct access to a Division 1 or Division 2 location is the same division as that location, except—

(a) An enclosed space that has direct access to a Division 1 location is not a hazardous location if—

(1) The access has self-closing gastight doors that form an air lock;

(2) The ventilation causes greater pressure in the space than in the Division 1 location; and

(3) Loss of ventilation overpressure activates an alarm at a manned station;

(b) An enclosed space that has direct access to a Division 1 location can be considered as a Division 2 location if—

(1) The access has a self-closing, gastight door that opens into the space and that has no hold-back device;

(2) Ventilation causes the air to flow with the door open from the space into the Division 1 location; and

(3) Loss of ventilation activates an alarm at a manned control station; and

(c) An enclosed space that has direct access to a Division 2 location is not a hazardous location if—

(1) The access has a self-closing, gastight door that opens into the space and that has no hold-back device;

(2) Ventilation causes the air to flow with the door open from the space into the Division 2 location; and

(3) Loss of ventilation activates an alarm at a manned control station.

§ 108.177 Electrical equipment in classified locations.

Electrical equipment and devices installed in spaces made non-hazardous by the methods indicated in § 108.175 must only be essential equipment.

Ventilation

§ 108.181 Ventilation for enclosed spaces.

(a) Each enclosed space must be vented or ventilated.

(b) There must be a means to close each vent or ventilating system.

(c) Each fan in a ventilating system must have remote controls installed in accordance with Subpart 111.80-13 of this chapter.

(d) There must be a means to close each doorway, ventilator, and annular space around each funnel or other opening to machinery, stowage, or working spaces. The means must be located outside the space.

(e) Each intake in a ventilating system must be located so as to prevent, as far as practicable, the intake of noxious fumes.

§ 108.185 Ventilation for enclosed classified locations.

(a) The ventilation system for each enclosed classified location must be designed to maintain a pressure differential between the enclosed classified location and each non-classified location adjacent to the enclosed classified location, so as to prevent the discharge of ignitable gases into the non-classified adjacent locations.

(b) Each air intake must be outside of enclosed classified locations.

(c) Each unit must have alarms at a continuously manned station that signal when—

(1) Gas is present in an enclosed classified location; or

(2) The ventilation system for the space is not working.

(d) Each ventilation system for enclosed classified locations must provide a complete change of air every five minutes.

§ 108.187 Ventilation for brush type electric motors in classified spaces.

Ventilation for brush type electric motors in classified locations must meet N.F.P.A. 496-1974 "Standard for Purged and Pressurized Enclosures for Electrical Equipment in Hazardous Locations", except audible and visual alarms may be used if shutting down the motors may cause unsafe conditions.

Accommodation Spaces

§ 108.193 Restrictions.

(a) There must be no direct communication between the accommodation spaces and any chainlocker, stowage, or machinery space, except through solid, close-fitted doors or hatches.

(b) No access, vent, or sounding tube from a fuel or oil tank may open into any accommodation space, except that accesses and sounding tubes may open into corridors.

§ 108.195 Location of accommodation spaces.

(a) On surface type units, accommodation spaces must not be located forward of a vertical plane located at 5 percent of the unit's length aft of the stem, at the designed summer load line.

(b) On all units, the deckhead of each accommodation space must be above the deepest load line.

§ 108.197 Construction of accommodation spaces.

(a) Each sleeping, mess, recreational, or hospital space that is adjacent to or immediately above a stowage or machinery space, paint locker, drying room, washroom, toilet space, or other odor source must be made odorproof.

(b) Each accommodation space that is adjacent to or immediately above a galley, machinery space, machinery casing, boiler room, or other noise or heat source, must be protected from the heat and noise.

(c) Where the shell or an unsheathed weather deck forms a boundary of an accommodation space, the shell of deck must have a covering that prevents the formation of moisture.

(d) The deckheads of each accommodation space must be a light color.

(e) Each accommodation space in which water may accumulate must have a drain scupper located in the lowest part of the space, considering the average trim of the unit.

(f) Each public toilet space must be constructed and located so that its odors do not readily enter any sleeping, mess, recreational, or hospital space.

§ 108.199 Arrangement of sleeping spaces.

To the extent practicable, each occupation group must be berthed together in sleeping spaces arranged to minimize disturbance created by personnel leaving for or arriving from a working period.

§ 108.201 Size of sleeping spaces.

(a) No sleeping space may berth more than four persons, except that a sleeping space for personnel not regularly employed on a unit may berth up to six persons if the space meets § 108.199 and berthing of six persons in that space is authorized by the Commandant (G-MMT).

(b) Without deducting any equipment used by the occupants, each sleeping space must have for each occupant—

(1) 2.8 square meters (approximately 30 square feet) of deck area; and

(2) 6 cubic meters (approximately 210 cubic feet) of volume.

(c) Each sleeping space must have at least 191 centimeters (approximately 6 feet 3 inches) of headroom over clear deck areas.

§ 108.203 Berths and lockers.

(a) Each sleeping space must have a separate berth for each occupant.

(b) No more than one berth may be placed over another.

(c) Each berth must have a framework of hard, smooth material that is not likely to corrode or harbor vermin.

(d) Each berth must be arranged to provide ample room for easy occupancy.

(e) Each berth must be at least 76 centimeters (approximately 30 inches) wide by 193 centimeters (approximately 76 inches) long.

(f) Adjacent berths must be separated by a partition that extends at least 46 centimeters (approximately 18 inches) above the sleeping surface.

(g) The bottom of a lower berth must be at least 30 centimeters (approximately 12 inches) above the deck.

(h) The bottom of an upper berth must be at least 76 centimeters (approximately 2 feet 6 inches) from the bottom of the berth below it and from the deck or any pipe, ventilating duct, or other overhead installation.

(i) Each berth must have a berth light.

(j) Each occupant of a sleeping space must have a readily accessible locker of hard, smooth material.

(k) Each locker must be at least .194 square meters (approximately 300 square inches) in cross section and 1.53 meters (approximately 60 inches) high.

§ 108.205 Wash spaces; toilet spaces; and shower spaces.

(a) For the purposes of this section—

(1) "Private facility" means a toilet, washing, or shower space that is accessible only from one single or double occupancy sleeping space;

(2) "Semi-private facility" means a toilet, washing or shower space that is accessible from either of two one-to-four person occupancy sleeping spaces; and

(3) "Public facility" means a toilet, washing, or shower space that is not private or semi-private.

(b) Each private facility must have one toilet, one shower, and one washbasin, all of which may be in a single space.

(c) Each semi-private facility must have at least one toilet and one shower, which may be in a single space.

(d) Each room adjoining a semi-private facility must have a washbasin if a washbasin is not installed in a semi-private facility.

(e) Each unit must have enough public facilities to provide at least one toilet, one shower, and one washbasin for each eight persons who occupy sleeping spaces that do not have private or semi-private facilities.

(f) Urinals may be installed in toilet rooms, but no toilet required in this section may be replaced by a urinal.

(g) Each public toilet space and washing space must be convenient to the sleeping space that it serves.

(h) No public facility may open into any sleeping space.

(i) Each washbasin, shower, and bathtub must have hot and cold running water.

(j) Adjacent toilets must be separated by a partition that is open at the top and bottom for ventilation and cleaning.

(k) Public toilet facilities and shower facilities must be separated.

(l) Each public facility that is a toilet space must have at least one washbasin unless the only access to the toilet space is through a washing space.

(m) Each toilet must have an open front seat.

(n) Each washing space and toilet space must be so constructed and arranged that it can be kept in a clean and sanitary condition and the plumbing and mechanical appliances kept in good working order.

(o) Washbasins may be located in sleeping spaces.

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§ 108.207 Messrooms.

(a) Each messroom that is not adjacent to the galley that serves it must be equipped with a steamtable.

(b) Each messroom must seat the number of persons expected to eat in the messroom at one time.

§ 108.209 Hospital spaces.

(a) Each unit carrying twelve or more persons on a voyage of more than three days must have a hospital space.

(b) Each hospital space must be suitably separated from other spaces.

(c) No hospital space may be used for any other purpose, when used for care of the sick.

(d) An entrance to each hospital space must be wide enough and arranged to readily admit a person on a stretcher.

(e) Each berth in a hospital space must be made of metal.

(f) Each upper berth must be hinged and arranged so that it can be secured clear of the lower berth.

(g) Each hospital space must have at least one berth that is accessible from both sides.

(h) Each hospital space must have one berth for every 12 persons or portion thereof on board, who are not berthed in single occupancy rooms, but the number of berths need not exceed six.

(i) Each hospital space must have a toilet, washbasin, and bathtub or shower accessible from the hospital space.

(j) Each hospital space must have clothes lockers, a table, and seats.

§ 108.210 Hospital space not required.

(a) The hospital space required under § 108.209 is not required on a unit if one single or double occupancy sleeping space, designated and equipped as a treatment or isolation room or both is available for immediate medical use, and has—

(1) An entrance that is wide enough and arranged to readily admit a person on a stretcher;

(2) A single berth or examination table that is accessible from both sides; and

(3) A washbasin in or immediately adjacent to it.

§ 108.211 Miscellaneous accommodation spaces.

(a) Each unit must have enough facilities for personnel to wash their own clothes, including at least one tub or sink that has hot and cold running water.

(b) Each unit must have enough equipment or space for the personnel to dry their own clothes.

(c) Each unit must have an accommodation space that can be used for recreation.

§ 108.213 Heating requirements.

(a) Each accommodation space must be heated by a heating system that can maintain at least 20°C. (68°F.).

(b) Radiators and other heating apparatuses must be constructed, located or shielded so as to avoid risk of—

(1) Fire;

(2) Danger; and

(3) Discomfort

to the occupants of each accommodation space.

(c) Each exposed pipe in an accommodation space, leading to a radiator or other heating apparatus must be insulated.

§ 108.215 Insect screens.

(a) Accommodation spaces must be protected against the admission of insects.

(b) Insect screens must be installed when natural ventilation is provided.

RAILS

§ 108.217 Guardrails and bulwarks.

(a) Each unit must have guardrails or bulwarks along the edge of the bridge, of each deck, and of each deck opening.

(b) Each guardrail and bulwark must extend at least one meter (39.37 inches) above the deck except where this height may interfere with the normal operation of the unit, a lesser height may be approved.

(c) Removable guardrails may be installed where operating conditions warrant their use.

§ 108.219 Guardrails.

(a) Except for exposed peripheries of a freeboard or superstructure deck,

each guardrail must have at least two evenly spaced courses.

(b) At exposed peripheries of a freeboard or superstructure deck, each guardrail must have at least three courses not more than 38 centimeters (15 in.) apart with the lowest course not more than 23 centimeters (9 in.) above the deck.

(c) For a rounded gunwale, the guardrail must be at the edge of the flat of the deck.

§ 108.221 Storm rails.

Each unit must have a storm rail in the following locations:

(a) On each deckhouse side that is normally accessible.

(b) On each side of each passageway that is wider than 1.83 meters (6 feet).

(c) On at least one side of each passageway that is less than 1.83 meters (6 feet) wide.

§ 108.223 Guards on exposed equipment.

Each unit must have hand covers, guards, or rails installed on all belts, gears, shafts, pulleys, sprockets, spindles, flywheels or other reciprocating, rotating or moving parts of machinery or equipment normally exposed to contact by personnel.

Helicopter Facilities

§ 108.231 Application.

Sections 108.231 through 108.241 apply to each unit with a helicopter landing facility.

§ 108.233 Location and size.

(a) Each helicopter deck must be—

(1) At least the size of the rotor diameter of the largest single main rotor helicopter that will be used on the facility; or

(2) If tandem main rotor helicopters use the facility, at least of a size to provide a longitudinal axis of 9/10 the overall length of the helicopter, and a width of ¾ of the overall length of the helicopter.

Note: For the purpose of paragraph (a)(2) the overall length is measured across both main rotors in the fore and aft line.

(b) Each helicopter deck must be located so as to provide clear approach/departure paths to enable the largest helicopter using the facility to operate in all weather conditions which allow helicopter operations.

§ 108.235 Construction.

(a) Each helicopter deck must be designed to accommodate the loadings (static and dynamic) imposed by operation and stowage of helicopters intended to use the facility as well as environmental loadings (wind, wave, water, snow, etc.) anticipated for the unit.

(b) The adequacy of each helicopter deck for the loadings required in paragraph (a) must be shown by design calculations. Where the placement of a load affects the suitability of a structural member, the load must be evaluated in the most unfavorable position for each member.

(c) The analysis required in paragraph (b) must be based on the dead load of the structure, existing stresses in the deck when it is an integral part of a unit's structure, and each of the following loading conditions:

(1) *Uniform distributed loading.* A loading of 2kg/m² (42 lb/ft²) applied to the helicopter deck area.

(2) *Helicopter landing impact loading.* The limit load established by the limit drop test in 14 CFR 29.725, or a load of not less than 75 percent of the helicopter maximum weight taken on a square area of 0.3×0.3 m (1 ft.×1 ft.) under each main landing gear unit applied anywhere on the helicopter deck area.

(3) *Stowed helicopter loading.* The helicopter maximum weight plus inertial forces from the helicopter due to anticipated unit motions, and applicable environmental loadings including wind loads.

(d) The landing area of each helicopter facility must—

(1) Have a non-skid surface;

(2) Have drainage facilities that prevent the collection of liquids and prevent liquids from spreading to or falling on other parts of the unit;

(3) Have recessed tie-down points; and

(4) Be free of projections, except that landing lights or other projections may be installed around the periphery of the landing deck provided

they do not interfere with landing and take-off operations.

(e) The unprotected perimeter of each helicopter facility must have a safety net at least 1.5 meters (4.92 ft.) wide. The outer edge of the net must not extend more than 15 centimeters (6 in.) above the surface of the deck.

(f) Each helicopter facility must have both a main and an emergency access/egress route located as far apart from each other as practicable.

§ 108.237 Fuel storage facilities.

(a) Helicopter fuel storage tanks must be installed as far as practicable from—

(1) The landing area; and

(2) Each source of vapor ignition.

(b) Integral tanks must meet Subpart 58.50 of this Chapter.

(c) Marine portable fuel stowage tanks must meet Part 64 of this chapter.

(d) Each marine portable fuel stowage tank must have a means to contain fuel spills or leaks.

§ 108.239 Fuel transfer equipment.

(a) Each nozzle must be a "deadman" type.

(b) Each hose must have a storage reel.

(c) Each hose must have a static grounding device.

(d) Each electric fuel transfer pump must have a control with a fuel transfer pump operation indicator light at the pump.

(e) There must be a fuel pump shut off at each of the access routes required by § 108.235(f).

(f) Each fuel transfer pump and each hose reel must have a means to contain fuel spills or leaks.

(g) Each hose must meet chapter 3 "Aircraft Fueling Hose" of National Fire Protection Association Standard for Aircraft Fuel Servicing (N.F.P.A. No. 407-1975).

§ 108.241 Visual aids.

(a) Each helicopter deck must—

(1) Have a wind direction indicator located in an unobstructed area readily visible to helicopter pilots approaching the deck;

(2) Be fitted around the perimeter with yellow and blue lights in alternate order, not more than 3 meters (10 ft.) apart; and

(3) Be marked with—

(i) The unit's identification;

(ii) A continuous line 40 centimeters (16 in.) wide on the perimeter; and

(iii) Aiming circles as may be appropriate considering deck configuration, helicopter type, and operational requirements.

(b) All markings must be in a contrasting color to the surface of the deck.

Subpart C—Stability

§ 108.301 Stability: Definitions.

For the purposes of this subpart:

(a) "Normal operating condition" means a condition of a unit when loaded or arranged for drilling, field transit, or ocean transit.

(b) "Severe storm condition" means a condition of a unit when loaded or arranged to withstand the passage of a severe storm.

(c) "Downflooding" means the entry of seawater through any opening which cannot be rapidly closed watertight, into the hull, superstructure, or columns of an undamaged unit due to heel, trim, or submergence of the unit.

(d) "Downflooding angle" means the static angle from the calm seawater surface at a unit's waterline to the first opening through which downflooding could occur, considering heel, trim, and submergence of the unit when subjected to a wind heeling moment (Hm) calculated in accordance with § 108.311.

§ 108.303 Stability requirements: General.

Each unit must be designed to have at least 5 cm (2 inches) of positive metacentric height in the upright equilibrium position for the full range of drafts, whether at the operating draft for navigation, towing, or drilling afloat, or at a temporary draft when changing drafts.

§ 108.305 Intact stability requirements.

(a) Each unit must be designed so that the wind heeling moments (Hm) and righting moments calculated for each of its normal operating conditions and severe storm conditions,

when plotted on graph 108.305, define areas that satisfy the equation [Area (A)] $[K]\times$[Area (B)] where—

(1) $K=1.4$, except that if the unit is a column stabilized unit $K=1.3$;

(2) Area (A) is the area on graph 108.305 under the righting moment curve between 0° and the second intercept angle or the angle of heel at which downflooding would occur, whichever angle is less; and

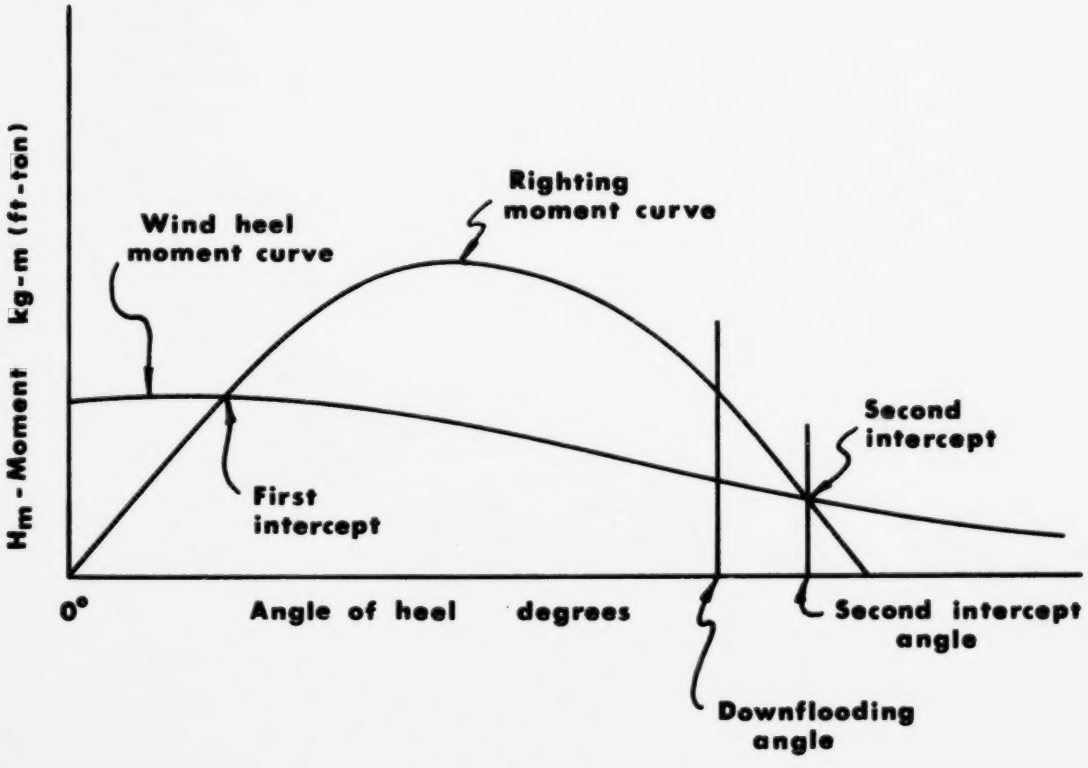
(3) Area (B) is the area on graph 108.305 under the wind heeling moment curve between 0° and the second intercept angle or the angle of heel at which downflooding of the unit would occur whichever angle is less.

(b) Each righting moment on graph 108.305 must be positive for all angles greater than 0° and less than the second intercept angle.

(c) For the purposes of this section, openings fitted with the weathertight closing appliances specified in § 108.114(b) are not considered as openings through which downflooding could occur if they can be rapidly closed and would not be submerged below the units' waterline prior to the first intercept angle, except that ventilation intakes and outlets for machinery spaces, crew spaces, and other spaces where ventilation is normally required are considered as openings through which downflooding could occur regardless of location.

(d) Each unit must be designed so that it can be changed from each of its normal operating conditions to a severe storm condition within a minimum period of time consistent with the operating manual required in § 109.121.

Graph 108.305 - Intact Stability Curves for a Given Normal Operating or Severe Storm Mode



§ 108.309 Stability on bottom.

Each bottom bearing unit must be designed so that, while supported on the sea bottom with footings or a mat, it continually exerts a downward force on each footing or the mat when subjected to the forces of wave and current and to wind blowing at the velocities described in § 108.311(b)(3).

§ 108.311 Calculation of wind heeling moment (Hm).

(a) The wind heeling moment (Hm) of a unit in a given normal operating condition or severe storm condition is the sum of the individual wind heeling moments (H) calculated for each of the exposed surfaces on the unit; i.e., $Hm=\Sigma H$.

(b) Each wind heeling moment (H) must be calculated using the equation $H=kv^2C_hC_sAh$, where—

(1) H=wind heeling moment for an exposed surface on the unit;

(2) k=0.0623 kilograms (kg-sec^2)/m^4 (0.00338 lb/(ft^2-knots^2));

(3) v=wind velocity of—

(i) 36 meters per second (70 knots) for normal operating conditions.

(ii) 51.5 meters per second (100 knots) for severe storm conditions.

(iii) 25.8 meters per second (50 knots) for damage conditions.

(4) A=projected area of an exposed surface on the unit;

(5) C_h=height coefficient for "A" from Table 108.311(a);

(6) C_s=shape coefficient for "A" from Table 108.311(b); and

(7) h=the vertical distance from the center of lateral resistance of the underwater hull to the center of wind pressure on "A".

(c) When calculating "A" in the equation described in paragraph (b) of this section—

(1) The projected area of each column or leg, if the unit has columns or legs, must not include shielding allowances;

(2) Each area exposed as a result of heel must be included;

(3) the projected area of a cluster of deck houses may be used instead of the projected area of each individual deck house in the cluster; and

(4) The projected area of open truss work may be calculated by taking 30% of the projected areas of both the front and back sides of the open truss work rather than by determining the projected area of each structural member of the truss work.

TABLE 108.311(a) —C_h *Values*

Height				C_h
Meters		Feet		
Over	Not exceeding	Over	Not exceeding	
0	15.3	0	50	1.00
15.3	30.5	50	100	1.10
30.5	46.0	100	150	1.20
46.0	61.0	150	200	1.30
61.0	76.0	200	250	1.37
76.0	91.5	250	300	1.43
91.5	106.5	300	350	1.48
106.5	122.0	350	400	1.52
122.0	137.0	400	450	1.56
137.0	152.5	450	500	1.60
152.5	167.5	500	550	1.63
167.5	183.0	550	600	1.67
183.0	198.0	600	650	1.70
198.0	213.5	650	700	1.72
213.5	228.5	700	750	1.75
228.5	244.0	750	800	1.77
224.0	256.0	800	850	1.79
Above 256		Above 850		1.80

NOTE: The "C_h" value in this table used in the equation described in section 108.311(b) corresponds to the value of the vertical distance in meters (feet) from the water surface at the design draft of the unit to the center of area of the "A" value used in the equation.

TABLE 108.311(b).—C_s Values

Shape	C_s
Cylindrical shapes	0.5
Hull (surface type)	1.0
Deckhouse	1.0
Cluster of deckhouses	1.1
Isolated structural shapes (cranes, angles, channels, beams, etc.)	1.5
Under deck areas (smooth surfaces)	1.0
Under deck areas (exposed beams and girders)	1.3
Rig derrick (each face and open truss works)	1.25

NOTE: The value of C_s in this table used in the equation described in § 108.311(b) corresponds to the shape of the projected Area "A" in the equation.

§ 108.313 Submission of intact stability data.

Intact stability data submitted under § 107.305 of this subchapter must contain the righting moment curves and wind heeling moment curves described in graph 108.305 of this subpart, each with supporting calculations, for each of the unit's normal operating conditions and severe storm conditions.

§ 108.315 Damage stability requirements.

(a) Each unit must be designed so that, while in each of its normal operating conditions and severe storm conditions, its final equilibrium waterline would remain below the lowest edge of any opening through which additional flooding could occur if the unit were subjected simultaneously to—

(1) Damage causing flooding described in §§ 108.319 through 108.323; and

(2) A wind heeling moment calculated in accordance with § 108.311(b) using a wind velocity of 25.8 meters per second (50 knots).

(b) Each unit must have a means to close off each pipe, ventilation system, and trunk in each compartment described in § 108.321 or § 108.323 if any portion of the pipe, ventilation system, or trunk is within 1.5 meters (5 feet) of the hull.

§ 108.317 General damage stability assumptions.

For the purpose of determining compliance with § 108.315 of this subpart, the assumptions are made that during flooding and the resulting change in the unit's waterline—

(a) The unit is not anchored or moored; and

(b) No compartment on the unit is ballasted or pumped out to compensate for the flooding described in §§ 108.319–108.323 of this subpart.

§ 108.319 Compartments assumed flooded: General.

The individual flooding of each of the compartments described in § 108.321 and § 108.323 of this subpart must be assumed for the purpose of determining compliance with § 108.315(a) of this subpart. Simultaneous flooding of more than one compartment must be assumed only when indicated in § 108.321 and § 108.323.

§ 108.321 Flooding on self-elevating and surface type units.

(a) On a surface type unit or self-elevating unit, all compartments within 1.5 meters (5 feet) of the hull of the unit between two adjacent main watertight bulkheads, the bottom shell, and the uppermost continuous deck or first superstructure deck where superstructures are fitted must be assumed to be subject to simultaneous flooding.

(b) On the mat of a self-elevating unit, all compartments of the mat must be assumed to be subject to individual flooding.

§ 108.323 Flooding on column stabilized units.

(a) Watertight compartments that are outboard of, or traversed by, a plane which connects the vertical centerlines of the columns on the periphery of the unit, and within 1.5 meters (5 feet) of an outer surface of a column or footing on the periphery of the unit, must be assumed to be subject to flooding as follows:

(1) When a column is subdivided into watertight compartments by horizontal watertight flats, all compartments in the column within 1.5 meters (5 feet) of the unit's waterline before damage causing flooding must be assumed to be subject to simultaneous flooding.

(2) When a column is subdivided into watertight compartments by vertical watertight bulkheads, each two adjacent compartments must be assumed

subject to simultaneous flooding if the distance between the vertical watertight bulkheads, measured at the column periphery, is equal to or less than one-eighth of the column perimeter at the draft under consideration.

(3) When a column is subdivided into watertight compartments by horizontal watertight flats and vertical watertight bulkheads, those compartments that are within the bounds described in paragraph (a)(2) and within 1.5 meters (5 feet) of the unit's waterline before damage causing flooding must be assumed to be subject to simultaneous flooding.

(b) Each compartment in a footing must be assumed to be subject to individual flooding when any part of the compartment is within 1.5 meters (5 feet) of the unit's waterline before damage causing flooding.

§ 108.325 Permeabilities.

The calculations submitted in accordance with § 108.329 of this subpart must show the permeability of each space considered in the calculations. The calculation of each permeability used must also be shown unless the value used is listed in Table 108.325.

TABLE 108.325—*Permeability Values*

Space	Permeability
Cargo or storage space	[1] 0.95
Accommodation space	0.95
Machinery space	0.85
Tank intended for liquids	[2] 10.0 or 0.95

[1] Actual value may be calculated and used.
[2] Use the value which results in the greatest change in the unit's waterline.

§ 108.329 Submission of damage stability data and calculations.

Damage stability data must be submitted for approval before the unit's original inspection for certification. These data must contain residual righting moment curves, wind heeling moment curves, and plans or sketches showing the unit's final equilibrium waterline, with supporting calculations for each, for each of the unit's normal operating conditions and severe storm conditions. These data must show compliance with § 108.315.

§ 108.335 Stability test.

(a) Except as provided in paragraph (c) of this section, the owner of a unit must—

(1) Conduct a stability test of the unit to determine the location of its center of gravity and lightship displacement; and

(2) Submit the results of the test for approval by the Coast Guard before the unit's original inspection for certification.[1]

(b) An authorized Coast Guard representative must be present at each stability test conducted under this section

(c) A stability test is not required for a unit if the owner provides the Coast Guard with the Coast Guard approved results of a stability test of a sister unit and the Commandant determines that reliable stability information for the unit not tested is obtainable from the test results of the sister unit.

§ 108.337 Plans and information required at the stability test.

The owner of a unit must provide the following plans and information to the authorized Coast Guard representative prior to the stability test:

(a) Lines.

(b) Curves of form.

(c) Capacity plans showing capacities and vertical and longitudinal centers of gravity of stowage spaces and tanks.

(d) Tank sounding tables.

(e) Draft mark locations.

(f) General arrangement plan of decks, holds, and inner bottoms.

(g) Inboard and outboard profile.

(h) A complete list of material or equipment to be installed, removed, or relocated after the test, including the weight and location of each item on the list.

§ 108.339 Stability test preparations.

The following preparations must be made before conducting a stability test:

(a) The unit must be as complete as practicable at the time of the test.

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[1] A stability letter is issued by the Coast Guard after approval of the test results and of the information required in § 109.121.

(b) Each tank must be either empty and dry or full and without air pockets, except that a tank may be partially filled if the Commandant (G-MMT) determines that compliance with this requirement is impracticable and that the effect of partial filling on the location of the center of gravity and the displacement of the unit can be accurately determined.

(c) All dunnage, tools, and other items extraneous to the complete unit must be removed from the unit.

(d) The water depth at the mooring site must provide ample clearance against grounding.

(e) Each mooring line must be arranged so that it does not interfere with the free inclination of the unit during the test.

(f) The draft and axis of rotation selected for the test must be those that result in acceptable accuracy in calculating the unit's displacement and location of center of gravity.

(g) At least two weeks prior to the date of the test, a stability test procedure must be submitted for approval. The procedure must include:

(1) Identification of the unit to be tested.

(2) Date and location of the test.

(3) Inclining weight data.

(4) Pendulum locations and lengths.

(5) Approximate draft and trim of the unit.

(6) Condition of each tank.

(7) Estimated items to be installed, removed, or relocated after test, including the weight and location of each item.

(8) Schedule of events.

§ 108.341 Stability test deviation.

The authorized Coast Guard representative present at a stability test may allow a deviation from the requirement of § 108.337 of this subpart if he determines that the deviation will not affect the accuracy of the test results.

§ 108.343 Stability: Alterations.

Where alterations are made which materially affect the stability of a unit, amended stability information must be approved by the Coast Guard. The Coast Guard may require the unit to have a new stability test.

Subpart D—Fire Extinguishing Systems

§ 108.401 Fire main system.

Each unit must have a fire main system.

§ 108.403 Fire extinguishing systems: General.

(a) Each of the following on a unit must have an approved fixed gaseous type extinguishing system:

(1) Each paint locker, oil room, and similar space.

(2) Each enclosed space containing internal combustion or gas turbine main propulsion machinery.

(3) Each enclosed space containing internal combustion machinery with an aggregate power of at least 1000 B.H.P.

(4) Each enclosed space containing a fuel oil unit, including purifiers, valves, or manifolds for main propulsion machinery or internal combustion machinery with an aggregate power of at least 1000 B.H.P.

(5) Each enclosed ventilation system for electric motors or generators used for vital services including bilge pumps, fire pumps, or propulsion.

(b) Each space containing an oil fired boiler, the fuel oil unit or valves for the boiler, or manifolds in the line between the fuel settling tanks and the boiler on a unit must have a fixed gas type, foam, water spray, or other approved fire extinguishing system.

§ 108.403a Fire extinguishing systems: Non-vital services.

Each enclosed ventilating system for electric motors or generators not used for vital services must have an access into the system for firefighting or be protected by a fixed fire protection system.

§ 108.404 Selection of fire detection system.

(a) If a fire detector is in a space, it must provide effective detection of fires most likely to occur in the space.

(b) The fire detection system must be designed to minimize false alarms.

§ 108.405 Fire detection system.

(a) Each fire detection system and each smoke detection system on a unit must—

(1) Be approved by the Commandant; and

(2) Have a visual alarm and an audible alarm in the pilothouse or at a normally manned control station for the system.

(b) Each fire detection system must be divided into zones to limit the area covered by any particular alarm signal.

(c) Each visual alarm must—

(1) Have a chart or diagram next to the alarm that shows the location of the zones in the system and that contains the instructions for operating, and testing the system;

(2) When activated show the zone in the system where fire has been detected; and

(3) Be in a noticeable location in the pilothouse or control station.

§ 108.407 Detectors for electric fire detection system.

(a) Each detector in an electric fire detection system must be located where—

(1) No portion of the overhead of a space protected is more than 3 meters (10 feet) from a detector;

(2) Beams and girders extending below the ceiling of the space protected and any other obstructions do not detract from the effectiveness of the detector; and

(3) Damage to the detector is unlikely to occur if it is not protected.

(b) Each detector must be set to activate at not less than 57° C (135° F) and at not more than 73° C (165° F), except that if a space normally has a high ambient temperature each detector may be set to activate at not less than 80° C (175° F) and not more than 107° C (225° F).

§ 108.409 Location and spacing of tubing in pneumatic fire detection system.

(a) All tubing in a pneumatic fire detection system must be on the overhead or within 300 millimeters (12 inches) of the overhead on a bulkhead in a location where—

(1) No portion of the overhead is more than 3.6 meters (12 feet) from the nearest point of tubing;

(2) Beams or girders extending below the ceiling or other obstructions do not detract from the effectiveness of the tubing; and

(3) Damage to the tubing, is unlikely to occur if it is not protected.

(b) If tubing in a tubing circuit is installed in an enclosed space, at least 5% of the tubing in the circuit must be exposed in the space, except that at least 7.6 meters (25 feet) of tubing must always be exposed in the space.

(c) A pneumatic fire detection system must be set to activate after approximately a 22°C. (40°F.) per minute increase in temperature at the center of the circuit in the system.

§ 108.411 Smoke detection system.

Each smoke accumulator in a smoke detection system must be located on the overhead of the compartment protected by the system in a location—

(a) Where no portion of the overhead of the compartment is more than 12 meters (40 feet) from an accumulator;

(b) That is no closer to the opening of a ventilator than 3 times the diameter or equivalent size of the opening.

(c) Where damage to the accumulator is unlikely to occur if it is not protected.

§ 108.413 Fusible element fire detection system.

(a) A fusible element fire detection system may be installed.

(b) The arrangements for the system must be acceptable to the Commandant.

Fire Main System

§ 108.415 Fire pump: General.

A fire main system must have at least two independently driven fire pumps that can each deliver water at a continuous pitot tube pressure of at least 3.5 kilograms per square centimeter (approximately 50 pounds per square inch) at at least two fire hose nozzles that are connected to the highest two fire hydrants on the unit. Alternative designs that meet the

pressure requirement of this paragraph will be considered for column stabilized and self elevating units.

§ 108.417 Fire pump components and associated equipment.

(a) Each fire pump in a fire main system must have a relief valve on its discharge side that is set to relieve at 1.75 kilograms per square centimeter (approximately 25 pounds per square inch) in excess of the pump discharge pressure necessary to meet the pressure required in § 108.415 for the pump or 8.6 kilograms per square centimeters (approximately 125 pounds per square inch), whichever is greater. A relief valve may be omitted if the pump operating under shut off condition is not capable of developing the pressure described in § 108.415 plus 1.75 kilograms per square centimeter (25 pounds per square inch).

(b) Each fire pump in a fire main system must have a pressure gauge on its discharge side.

(c) Fire pumps may be used for other purposes. One of the required pumps must be kept available for use on the fire system at all times. If a fire pump is used in a system other than the fire main system, except for branch lines connected to the fire main for deck washing, each pipe connecting the other system must be connected to the pump discharge through a shut off valve at a manifold near the pump. If the fire pump exceeds the pressure in § 108.417(a), the pipe leading from the discharge manifold to other portions of the fire main system must have a reducing station and a pressure gauge in addition to the pressure gauge required by paragraph (b) of this section.

(d) If a fire pump has a reducing station, the relief valve required by paragraph (a) of this section for the pump and the additional pressure gauge required in paragraph (c) of this section must not be located on the discharge side of the reducing station.

(e) An oil line must be connected to a fire pump.

§ 108.419 Fire main capacity.

The diameter of the fire main must be sufficient for the effective distribution of the maximum required discharge from two fire pumps operating simultaneously.

§ 108.421 Location of fire pumps and associated equipment.

Each fire pump required by § 108.415, and the source of power, controls, sea connections for the fire pump, and booster pumps, if installed, must be installed in locations where, if a fire occurs in an enclosed space, all of the fire pumps on the unit are not made inoperative, except that if compliance with this requirement is impracticable, a gas type extinguishing system may be installed to protect at least one of the fire pumps, its source of power, and controls.

§ 108.423 Fire hydrants and associated equipment.

(a) A fire main system must have enough fire hydrants so that each accessible space may be sprayed with at least two spray patterns of water.

(b) In a main machinery space, except a shaft alley with no assigned space for stowage of combustibles, each spray pattern of water must be from one length of fire hose and each must be from a separate outlet. In all other spaces at least one spray pattern of water must be from one length of fire hose.

(c) No outlet on a fire hydrant may point above the horizontal.

(d) Each fire hydrant must have at least one spanner and at least one fire hose rack or reel.

§ 108.425 Fire hoses and associated equipment.

(a) Each length of fire hose in a fire main system must be—

(1) Of 1½ or 2½ inch nominal hose size diameter;

(2) Of 50 foot nominal hose size length; and

(3) Lined commercial fire hose that meets Standard 19 of the Underwriters' Laboratories, Inc., (1971 edition) or Federal Specification ZZ-H-451f.

(b) Each fire hose coupling must—

(1) Be made of brass, bronze, or material that has corrosion resistant properties at least equal to those of brass or bronze; and

(2) Have 9 National Standard Fire-hose Coupling (NSFC) threads per inch for 1½ inch hose or 7½ NSFC threads per inch for 2½ inch hose.

(c) Each nozzle for a fire hose in a fire main system must be a combination solid stream and water spray fire hose nozzle that is approved under Subpart 162.027 of this chapter.

(d) A low velocity spray applicator approved under Subpart 162.027 of this chapter is required at each fire hydrant serving—

(1) Machinery spaces containing oil fired boilers, internal combustion machinery or oil fuel units; and

(2) Helicopter decks.

§ 108.427 International shore connection.

A fire main system on a unit in international service must have—

(a) At least one international shore connection that meets the requirements in Subpart 162.034 of this Chapter;

(b) A cutoff valve and check valve for each connection; and

(c) Facilities available enabling the connection to be used on either side of the unit.

§ 108.429 Fire main system protection.

(a) Each pipe and fire hydrant in a fire main system must be installed to the extent practicable in locations that are not exposed to damage by materials that are moved on or onto the deck.

(b) Each part of the fire main system located on an exposed deck must either be protected against freezing or be fitted with cutout valves and drain valves to shut off and drain the entire exposed system in freezing weather.

Fixed Carbon Dioxide Fire Extinguishing Systems

§ 108.431 CO_2 systems: General.

(a) Sections 108.431 through 108.457 apply to high pressure carbon dioxide fire extinguishing systems.

(b) Low pressure systems, that is, those in which the carbon dioxide is stored in liquid form at low temperature, must be approved by the Commandant.

§ 108.433 Quantity of CO_2: General.

Each CO_2 system must have enough gas to meet the quantity requirements of § 108.439 for the space requiring the greatest amount of CO_2.

§ 108.435 CO_2 for enclosed ventilation systems for rotating electrical equipment.

(a) The number of pounds of CO_2 required for the initial charge to protect enclosed ventilation systems for rotating electrical equipment must be equal to the gross volume measured in cubic feet of the system divided by—

(1) 10 systems having a volume less than 57 cubic meters (2,000 cubic feet), or

(2) 12 for systems having a volume of 57 cubic meters (2,000 cubic feet) or more.

(b) In addition to the CO_2 required for the intial charge, the system must have enough CO_2 for delayed charges to maintain at least a 25 percent concentration until the equipment can be stopped, unless the initial charge is enough to maintain a 25 percent concentration.

§ 108.437 Pipe sizes and discharges rates for enclosed ventilation systems for rotating electrical equipment.

(a) The minimum pipe size for the initial charge must meet table 108.441 and the discharge of the required amount of CO_2 must be completed within 2 minutes.

(b) The minimum pipe size for the delayed discharge must be at least 1.25 centimeters (½ inch) standard pipe.

(c) The pipe used for the initial discharge must not be used for the delayed discharge, except systems having a volume of less than 57 cubic meters (2,000 cubic feet).

§ 108.439 Quantity of CO_2 for protection of spaces.

(a) The number of pounds of CO_2 required to protect a space must be equal to the gross volume of the space divided by the appropriate factor from Table 108.439.

(b) If a machinery space includes a casing, the gross volume of the space may be calculated using the reductions allowed in 46 CFR 95.10-5(e).

(c) If fuel can drain from a space to an adjacent space or if two spaces are not entirely separate, the requirements for both spaces must be used to determine the amount of CO_2 to be provided and the CO_2 system must be arranged to discharge into both spaces simultaneously.

TABLE 108.439 —*CO_2 Supply Factors*

[Gross volume of space in cubic feet]

Over	Not over	Factor
0	500	15
500	1,600	16
1,600	4,500	18
4,500	50,000	20
50,000		22

§ 108.441 Piping and discharge rates for CO_2 systems.

(a) The size of branch lines to spaces protected by a CO_2 system must meet Table 108.441.

(b) Distribution piping within a space must be proportioned from the supply line to give proper distribution to the outlets without throttling.

(c) The number, type, and location of discharge outlets must distribute the CO_2 uniformly throughout the space.

TABLE 108.441 —*CO_2 System Pipe Size*

CO_2 supply in system, kilograms (pounds)	Minimum pipe size (inches), millimeters (inches)
45 (100)	12.7 (½).
104 (225)	19.05 (¾).
136 (300)	25.4 (1).
272 (600)	31.75 (1¼).
450 (1,000)	38.10 (1½).
1,110 (2,450)	50.80 (2).
1,130 (2,500)	63.5 (2½).
2,023 (4,450)	76.2 (3).
3,229 (7,100)	88.9 (3½).
4,750 (10,000)	101.6 (4).
6,818 (15,000)	114.3 (4½).

(d) The total area of all discharge outlets must be more than 35 percent and less than 85 percent of the nominal cylinder outlet area or the area of the supply pipe, whichever is smaller. The nominal cylinder outlet area in square centimeters is determined by multiplying the factor 0.0313 by the number of kilograms of CO_2 required. (The nominal cylinder outlet area in square inches is determined by multiplying the factor 0.0022 by the number of pounds of CO_2 required). The nominal cylinder outlet area must not be less than 71 square millimeters (0.110 square inches).

(e) A CO_2 system must discharge at least 85 percent of the required amount within 2 minutes.

§ 108.443 Controls and valves.

(a) At least one control for operating a CO_2 system must be outside the space or spaces that the system protects and in a location that would be accessible if a fire occurred in any space that the system protects. Control valves must not be located in a protected space unless the CO_2 cylinders are also in the protected space.

(b) A CO_2 system that protects more than one space must have a manifold with a stop valve, the normal position of which is closed, that directs the flow of CO_2 to each protected space.

(c) A CO_2 system that protects only one space must have a stop valve installed between the cylinders and the discharge outlets in the system, except on a system that has a CO_2 supply of 136 kilograms (300 pounds) or less.

(d) At least one of the control stations in a CO_2 system that protects a machinery space must be as near as practicable to one of the main escapes from that space.

(e) All distribution valves and controls must be of an approved type.

(f) Each CO_2 system that has a stop valve must have a remote control that operates only the stop valve and must have a separate remote control for releasing the required amount of CO_2 into the space protected by the system.

(g) Each CO_2 system that does not have a stop valve must be operated by a remote control that releases the required amount of CO_2 into the space protected by the system.

(h) Remote controls to each space must be in an enclosure.

(i) Each system must have a manual control at its cylinders for releasing CO_2 from the cylinders, except that if the system has pilot cylinders, a manual control is not required for other than pilot cylinders.

(j) If gas pressure is used to release CO_2 from a system having more than 2 cylinders, the system must have at least 2 pilot cylinders to release the CO_2 from the remaining cylinders.

(k) If the entrance to a space containing the CO_2 supply or controls of a CO_2 system has a lock, the space must have a key to the lock in a break-glass type box that is next to and visible from the entrance.

§ 108.445 Alarm and means of escape.

(a) Each CO_2 system that has a supply of more than 136 kilograms (300 pounds) of CO_2, except a system that protects a tank, must have an alarm that sounds for at least 20 seconds before the CO_2 is released into the space.

(b) Each audible alarm for a CO_2 system must have the CO_2 supply for the system as its source of power and must be in a visible location in the spaces protected.

§ 108.447 Piping.

(a) Each pipe, valve, and fitting in a CO_2 system must have a bursting pressure of at least 420 kilograms per square centimeter (6,000 pounds per square inch).

(b) All piping for a CO_2 system of nominal size of 19.05 millimeters (¾ inch) inside diamater or less must be at least Schedule 40 (standard weight) and all piping of nominal size over 19.05 millimeters (¾ inch) inside diameter must be at least Schedule 80 (extra heavy).

(c) Each pipe, valve, and fitting made of ferrous materials in a CO_2 system must be protected inside and outside from corrosion.

(d) Each CO_2 system must have a pressure relief valve set to relieve between 168 and 196 kilograms per square centimeter (2,400 and 2,800 pounds per square inch) in the distribution manifold or other location that protects the piping when all branch line shut off valves are closed.

(e) The end of each branch line in a CO_2 system must extend at least 50 millimeters (2 inches) beyond the last discharge outlet and be closed with a cap or plug.

(f) Piping, valves, and fittings in a CO_2 system must be securely supported and protected from damage.

(g) Each CO_2 system must have drains and dirt traps located where dirt or moisture can accumulate in the system.

(h) Discharge piping in a CO_2 system may not be used for any other purpose except as part of a fire detection system.

(i) Piping in a CO_2 system that passes through accommodation spaces must not have drains or other openings within these spaces.

§ 108.449 Piping tests.

(a) Each test prescribed in (b), (c), and (d) of this section must be performed upon completion of the piping installation.

(b) When tested with CO_2 or other inert gas under a pressure of 70 kilograms per square centimeter (1000 pounds per square inch), with no additional gas introduced into the system, the leakage in the piping from the cylinders to the stop valves in the manifold must not allow a pressure drop of more than 10.5 kilograms per square centimeter (150 pounds per square inch) per minute for a 2 minute period.

(c) When tested with CO_2 or other inert gas under a pressure of 42 kilograms per square centimeter (600 pounds per square inch), with no additional gas introduced into the system, the leakage in each branch line must not allow a pressure drop of more than 10.5 kilograms per square centimeter (150 pounds per square inch) per minute for a 2-minute period. The distribution piping must be capped within the protected space.

(d) Small independent systems protecting emergency generator rooms, lamp lockers and similar small spaces need not meet the tests prescribed in paragraphs (a) and (b) of this section if they are tested by blowing out the piping with air at a pressure of at least 7 kilograms per square centimeter (100 pounds per square inch).

§ 108.451 CO_2 storage.

(a) Except as provided in paragraph (b) of this section, each cylinder of a

CO_2 system must be outside each space protected by the system and in a location that would be accessible if a fire occurred in any space protected by the system.

(b) A CO_2 system that has a CO_2 supply of 136 kilograms (300 pounds) or less may have one or more cylinders in the space protected by the system if the space has a heat detection system to activate the system automatically in addition to the remote and manual controls required by this subpart.

(c) Each space that contains cylinders of a CO_2 system must be ventilated and designed to prevent an ambient temperature of more than 54° C. (130° F.)

(d) Each cylinder in a CO_2 system must be securely fastened, supported, protected from damage, in an accessible location, and capable of removal from that location.

(e) Each unit must have a means for weighing cylinders of a CO_2 system.

(f) A cylinder in a CO_2 system may not be mounted in a position that is inclined more than 30° from a vertical position, except that a cylinder having flexible or bent siphon tubes may be mounted in a position that is inclined up to 80° from the vertical. The bottom of each cylinder when mounted must be at least 5 centimeters (2 inches) from the deck.

(g) If a cylinder does not have a check valve on its independent cylinder discharge, it must have a plug or cap to close the outlet when the cylinder is moved.

(h) Each CO_2 system cylinder must be made, tested, and marked in accordance with 46 CFR 147.04-1.

§ 108.453 Discharge outlets.

Each discharge outlet must be of an approved type.

§ 108.455 Enclosure openings.

(a) Mechanical ventilation for spaces protected by a CO_2 system must be designed to shut down automatically when the system is activated.

(b) Each space that is protected by a CO_2 system and that has natural ventilation must have a means for closing that ventilation.

(c) Each space protected by a CO_2 system must have the following means for closing the openings to the space from outside the space:

(1) Doors, shutters, or dampers for closing each opening in the lower portion of the space.

(2) Doors, shutters, dampers or temporary means such as canvas or other material normally on board a unit may be used for closing each opening in the upper portion of the space.

§ 108.457 Pressure release.

Each air tight or vapor tight space, such as a paint locker, that is protected by a CO_2 system must have a means for releasing pressure that accumulates within the space if CO_2 is discharged into the space.

Halogenated Gas Extinguishing System

§ 108.458 General.

Halogenated gas extinguishing systems may be installed if approved by the Commandant.

Foam Extinguishing Systems

§ 108.459 Number and location of outlets.

(a) A foam extinguishing system in a space must have enough outlets to spread a layer of foam of uniform thickness over the deck or bilge areas of the space.

(b) A foam extinguishing system in a space that has a boiler on a flat that is open to or can drain into a lower portion of the space must have enough outlets to spread a layer of foam of uniform thickness over the—

(1) Flat; and

(2) Deck or bilge areas of the space.

(c) A foam extinguishing system for a tank must have enough outlets to spread a layer of foam of uniform thickness over the surface of the liquid in the tank.

§ 108.461 Coamings.

Each machinery flat in a space that has a foam extinguishing system must have coamings that are high enough to retain spilled oil and foam on the flat on all openings except deck drains.

§ 108.463 Foam rate: Protein.

(a) If the outlets of a protein foam extinguishing system are in a space, the foam rate at each outlet must be at least 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered by the systems.

(b) If the outlets of a protein foam extinguishing system are in a tank, the foam rate at each outlet must be at least 4.07 liters per minute for each square meter (.1 gallon per minute for each square foot) of liquid surface in the tank.

§ 108.467 Water supply.

The water supply of a foam extinguishing system must not be the water supply of the fire main system on the unit unless when both systems are operated simultaneously—

(a) The water supply rate to the foam production equipment meets the requirements of this section; and

(b) Water supply rate to the fire hydrants required by § 108.415 of this subpart allows compliance with the pressure requirement in that section.

§ 108.469 Quantity of foam producing materials.

(a) Except as provided in paragraph (b) of this section, each foam extinguishing system with outlets—

(1) In a tank must have enough foam producing material to discharge foam for at least 5 minutes at each outlet; and

(2) In a space must have enough foam producing material to discharge foam for at least 3 minutes at each outlet.

(b) If a foam system has outlets in more than one tank or space, the system need have only enough foam producing material to cover the largest space that the system covers or, if the liquid surface of a tank covered by the system is larger, the tank with the largest liquid surface.

§ 108.471 Water pump.

Each water pump in a foam extinguishing system must be outside each machinery space in which the system has outlets and must not receive power from any of those spaces.

§ 108.473 Foam system components.

(a) Each foam agent, each tank for a foam agent, each discharge outlet, each control, and each valve for the operation of a foam extinguishing system must be approved by the Commandant.

(b) Each foam agent tank and each control and valve for the operation of a foam extinguishing system with outlets in a space must be outside the space and must not be in a space that may become inaccessible if a fire occurs in the space.

(c) Each control for a foam extinguishing system with outlets in a space must be near a main escape from the space.

§ 108.474 Aqueous film forming foam systems.

Aqueous film forming foam systems may be installed if approved by the Commandant.

§ 108.475 Piping.

(a) Each pipe, valve, and fitting in a foam extinguishing system must meet the applicable requirements in Subchapter F of this chapter.

(b) Each pipe, valve, and fitting made of ferrous material must be protected inside and outside from corrosion.

(c) Each pipe, valve, and fitting must have support and protection from damage.

(d) Each foam extinguishing system must have enough—

(1) Dirt traps to prevent the accumulation of dirt in its pipes; and

(2) Drains to remove liquid from the system.

(e) Piping in a foam extinguishing system must be used only for discharging foam.

§ 108.477 Fire hydrants.

(a) If a fixed foam extinguishing system has outlets in a main machinery space, at least 2 fire hydrants, in addition to the fire hydrants required by § 108.423 of this subpart, must be installed outside the entrances to the space with each at a separate entrance.

(b) Each hydrant must have enough hose to spray any part of the space.

(c) Each hydrant must have a combination nozzle and applicator.

Fire Protection for Helicopter Facilities

§ 108.486 Helicopter decks.

At least two of the accesses to the helicopter landing deck must each have a fire hydrant on the unit's fire main system located next to them.

§ 108.487 Helicopter deck fueling operations.

(a) Each helicopter landing deck on which fueling operations are conducted must have a fire protection system that discharges protein foam or aqueous film forming foam.

(b) a system that only discharges foam must—

(1) Have enough foam agent to discharge foam continuously for at least 5 minutes at maximum discharge rate;

(2) Have at least the amount of foam agent needed to cover an area equivalent to the swept rotor area of the largest helicopter for which the deck is designed with foam at—

(i) If protein foam is used, 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered for five minutes;

(ii) If aqueous film forming foam is used, 4.07 liters per minute for each square meter (.1 gallons per minute for each square foot) of area covered for five minutes; and

(3) Be capable of discharging from each hose at 7 kilograms per square centimeter (100 pounds per square inch) pressure—

(i) A single foam stream at a rate of at least 340 liters (90 gallons) per minute; and

(ii) A foam spray at a rate of at least 190 liters (50 gallons) per minute.

(c) Each system must have operating controls at each of its hose locations, be protected from icing and freezing, and be capable of operation within 10 seconds after activation of its controls.

(d) Each system must have at least one hose at each of the two access routes required by § 108.235(f) of this Part. Each hose must be reel mounted and long enough to cover any point on the helicopter deck. Each hose that discharges foam must have a nozzle that has foam stream, foam spray, and off positions.

§ 108.489 Helicopter fueling facilities.

(a) Each helicopter fueling facility must have a fire protection system that discharges one of the following agents in the amounts prescribed for the agents over the area of the fuel containment systems around marine portable tanks, fuel transfer pumps and fuel hose reels:

(1) Protein foam at the rate of 6.52 liters per minute for each square meter (.16 gallons per minute for each square foot) of area covered for five minutes.

(2) Aqueous film forming foam at the rate of 4.07 liters per minute for each square meter (.1 gallon per minute for each square foot) of area covered for five minutes.

(3) 22.5 kilograms (50 pounds) of dry chemical (B-V semi-portable) for each fueling facility of up to 27.87 square meters (300 square feet).

(b) If the fire protection system required by § 108.487 of this subpart is arranged so that it covers both a helicopter fueling facility and a landing deck, the system must have the quantity of agents required by this section in addition to the quantity required by § 108.487.

Hand Portable and Semiportable Fire Extinguishing Systems

§ 108.491 General.

Each hand portable and semiportable fire extinguisher on a unit must be approved under Subpart 162.028 or 162.039 of this chapter.

§ 108.493 Location.

(a) Each unit must have the hand portable and semiportable fire extinguishers prescribed in Table 108.495(a) of this subpart and installed in the locations prescribed in the table.

(b) Each portable and semi-portable fire extinguisher must be visible and readily accessible.

(c) The location, size, and number of each portable and semiportable fire extinguisher on a unit must be acceptable to the appropriate OCMI. The OCMI may require extinguishers in

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addition to those prescribed in Table 108.495(a) if he considers them necessary for fire protection on the unit.

(d) Each hand portable and semiportable fire extinguisher that has a nameplate which states that it is to be protected from freezing, must be located where freezing temperatures do not occur.

§ 108.495 Spare charges.

(a) Each unit must have enough spare charges for 50 percent of the hand portable fire extinguishers required under Table 108.495(a) of this subpart that are rechargeable by personnel on the unit.

(b) If a unit has extinguishers that cannot be recharged by personnel on unit, it must also have at least one spare extinguisher for each classification and variety of those extinguishers.

TABLE 108.495(a) —*Hand Portable Fire Extinguishers and Semiportable Fire-Extinguishing Systems*

Space	Classification (see table 108.495(b))	Quantity and location
SAFETY AREAS		
Wheelhouse and control room	C–I	2 in vicinity of exit.
Stairway and elevator enclosure		None required.
Corridors	A–II	1 in each corridor not more than 150 ft (45 m) apart. (May be located in stairways.)
Lifeboat embarkation and lowering stations		None required.
Radio room	C–I	2 in vicinity of exit.
ACCOMMODATIONS		
Staterooms, toilet spaces, public spaces, offices, lockers, small storerooms, and pantries, open decks, and similar spaces.		None required.
SERVICE SPACES		
Galleys	B–II or C–II	1 for each 2,500 ft² (232 m²) or fraction thereof suitable for hazards involved.
Paint and lamp rooms	B–II	1 outside each room in vicinity of exit.
Storerooms	A–II	1 for each 2,500 ft² (232 m²) or fraction thereof located in vicinity of exits, either inside or outside the spaces.
Work shop and similar spaces	C–II	1 outside each space in vicinity of an exit.
MACHINERY SPACES		
Oil-fired boilers: Spaces containing oil-fired boilers, either main or auxiliary, or their fuel oil units.	B–II	2 required in each space.
	B–V	1 required in each space.
Internal combustion or gas turbine propelling machinery spaces.	B–II	1 for each 1,000 brake horsepower but not less than 2 nor more than 6 in each space.
	B–III	1 required in each space. See note 1.
Motors or generators of electric propelling machinery that do not have an enclosed ventilating system.	C–II	1 for each motor or generator.
Motors and generators of electric propelling machinery that have enclosed ventilating systems.		None required.
AUXILIARY SPACES		
Internal combustion engines or gas turbine	B–II	Outside the space containing engines or turbines in vicinity of exit.
Electric emergency motors or generators	C–II	1 outside the space containing motors or generators in vicinity of exit.
Steam driven auxiliary machinery		None required.
Trunks to machinery spaces		Do.
Fuel tanks		Do.
MISCELLANEOUS AREAS		
Helicopter landing decks	B–V	1 at each access route.

TABLE 108.495(a).—*Hand Portable Fire Extinguishers and Semiportable Fire-Extinguishing Systems*—Continued

Space	Classification (see table 108.495(b))	Quantity and location
Helicopter fueling facilities	B–IV	1 at each fuel transfer facility. See note 2.
Drill floor	C–II	2 required.
Cranes with internal combustion engines	B–II	1 required.

NOTES: 1. Not required where a fixed gas extinguishing system is installed.
2. Not required where a fixed foam system is installed in accordance with sec. 108.489 of this subpart.

TABLE 108.495(b)

	Classification: Type and size	Water liters (gallons)	Foam liters (gallons)	Carbon dioxide kilograms (pounds)	Dry chemical kilograms (pounds)	Halon 1211 kilograms (pounds)
A	II	9.5 (2½)	9.5 (2½)		2.25 (5)[3]	
B	I		4.7 (1¼)	1.8 (4)	0.9 (2)	1.1 (2½)
B	II		9.5 (2½)	6.7 (15)	4.5 (10)	4.5 (10)[5]
B	III		45.5 (12)	15.8 (35)	9.0 (20)	
B	IV		7.6 (20)	22.5 (50)	13.5 (30)	
B	V		152 (40)	45 (100)[4]	22.5 (50)[4]	
C	I			1.8 (4)	0.9 (2)	
C	II			6.7 (15)	4.5 (10)	
C	III			15.8 (35)	9.0 (20)	
C	IV			22.5 (50)	13.5 (30)	

NOTE: 1. Fire extinguishers are designed by type as follows: (a) "A" for fires in conbustible materials such as wood. (b) "B" for fires in flammable liquids and greases. (c) "C" for fires in electrical equipment.
2. Fire extinguishers are designated by size where size "I" is the smallest and size "V" is the largest. Sizes "I" and "II" are hand-portable extinguishers and sizes "III", "IV", and "V" are semiportable extinguishers.
3. Must be specifically approved as a type A, B, or C extinguisher.
4. For outside use, double the quantity of agent that must be carried.
5. For outside use only.

§ 108.496 Semiportable fire entinguishers.

(a) The frame or support of each size III, IV, and V fire extinguisher required by Table 108.495(a), except a wheeled size V extinguisher provided for a helicopter landing deck, must be welded or otherwise permanently attached to a bulkhead or deck.

(b) If the following semiportable fire extinguishers have wheels, they must be securely stowed when not in use to prevent them from rolling out of control under heavy sea conditions:

(1) Each size V extinguisher required for a helicopter landing deck.

(2) Each size III, IV, and V extinguisher that is not required by Table 108.495(a).

(46 U.S.C. 375, 390b, 416, 481, and 526p; 49 U.S.C. 1655; 49 CFR 1.46)

[CGD 77-039, 44 FR 34133, June 14, 1979]

MISCELLANEOUS FIREFIGHTING EQUIPMENT

§ 108.497 Fireman's outfits.

Each unit must have at least 2 fireman's outfits. Each fireman's outfit on a unit must consist of—

(a) A self-contained breathing apparatus approved under § 160.011 of this chapter;

(b) A three-cell, explosion proof flashlight with the Underwriter's Laboratories, Inc., label and set of spare batteries for the flashlight;

(c) An oxygen and explosive meter with the Underwriter's Laboratories, Inc. label or the Factory Mutual label;

(d) A lifeline that—

(1) Is attached to the self-contained breathing apparatus;

(2) Is made of bronze wire rope, inherently corrosion resistant steel wire rope, or galvanized or tinned steel wire rope;

(3) Is made up of enough 15.2 meters (50 foot) or greater lengths of wire

rope to permit use of the outfit in any location on the unit;

(4) Has each end fitted with a hook with a 16 millimeters (⅝ inch) throat opening for the keeper; and

(5) Has a minimum breaking strength of 680 kilograms (1,500 pounds).

(e) Boots and gloves that are made of rubber or other electrically nonconductive material;

(f) A helmet that meets the requirements in ANSI standard Z-89.1-1969; and

(g) Clothing that protects the skin from scalding steam and the heat of fire and that has a water resistant outer surface.

§ 108.499 Fire axes.

Each unit must have at least two fire axes.

Subpart E—Lifesaving Equipment

§ 108.501 Survival capsule.

For the purposes of this subchapter, the term lifeboat includes survival capsules.

§ 108.503 Lifeboats.

(a) Each unit with 30 persons or less allowed on board must have at least one lifeboat. Each unit with more than 30 persons allowed on board must have at least two lifeboats. The total number of lifeboats on a unit must accommodate all personnel on board.

(b) Each lifeboat on a unit must be approved under Subpart 160.035 of this chapter.

(c) Each lifeboat on a unit must be motor propelled and have a permanently installed rigid enclosure of international orange that provides protection from exposure and fire during operation of the lifeboat.

(d) Each lifeboat on a unit must have the equipment required by § 94.20-10 of this chapter for a lifeboat on an ocean or coastwise vessel other than a seagoing barge, except that the following equipment is not required:

(1) Ditty bag.

(2) Lantern if the lifeboat has equivalent interior lighting.

(3) Illuminating oil, if the lifeboat does not carry a lantern.

(4) Protecting cover.

(e) In addition to the equipment listed in paragraph (d), the following equipment is not required for each lifeboat on a unit which is not in international service:

(1) Condensed milk.

(2) Oars.

(3) Storm oil.

(4) Provisions.

(5) Rowlocks.

(f) Each lifeboat must have a list of the equipment it is required to carry. Except for boat hooks, the equipment and list must be securely stowed in the lifeboat. The equipment required by paragraph (d) must meet the requirements of § 94.20-15 of this chapter.

(g) Each unit must have a manual for each lifeboat containing the following detailed information:

(1) Instructions for launching the lifeboat.

(2) Instructions for operating the lifeboat, its accessories, and its equipment.

(3) Maintenance and repair instructions.

(4) Schedule of periodic maintenance.

(5) Diagram of lubrication points with recommended lubricants.

(6) List of replaceable parts.

(7) List of sources of repair parts.

(8) Log of records of inspections and maintenance.

§ 108.505 Liferafts.

(a) Each unit must have enough inflatable liferafts to accommodate at least 100% of the persons allowed on board.

(b) Each inflatable liferaft on a unit must—

(1) be approved under Subpart 160.051 of this chapter as an inflatable liferaft intended for an ocean service vessel; and

(2) have a carrying capacity of not less than 6 nor more than 25 persons.

(c) Lifeboats in addition to those required by § 108.503 may be substituted for inflatable liferafts.

§ 108.506 Lifeboat and liferaft launching capability.

(a) Each lifeboat and liferaft on a surface type unit must be capable of

being launched to the water at the minimum operating draft when the unit has an adverse list up to 15° or trim up to 10°.

(b) Each lifeboat and liferaft on a non-surface type unit must be capable of being launched to the water at the maximum operating height above the water when the unit has an adverse list and trim, the amount of which is determined by the characteristics of the unit.

(c) Each liferaft on a unit which is launched from a position more than 3 meters (10 ft.) above the water must be davit launched.

§ 108.507 Launching equipment for lifeboats.

(a) Each unit must have the following launching equipment for each lifeboat:

(1) Mechanical disengaging apparatus that is approved under Subpart 160.033 of this chapter.

(2) Gravity davits that are approved under Subpart 160.032 of this chapter.

(3) A winch that is approved under Subpart 160.015 of this chapter.

(4) A means to hold the lifeboat steady in a location that allows the full complement to board the boat prior to launching.

(5) Wire falls that are—

(i) Equal or superior to 6 x 19 regular lay filler wire, pre-lubricated during construction;

(ii) Not more than 2 part falls; and

(iii) Designed to have a minimum breaking strength of at least six times the maximum working load.

(6) Blocks, if necessary to allow the falls to lead freely from the drum of the winch, that—

(i) Have sheaves each with a diameter measured from the base of the groove in the sheave that is at least 12 times as large as the diameter of the fall passing over the sheave;

(ii) Have a means to lubricate the moving parts of the blocks; and

(iii) Are designed to have a minimum breaking strength of at least six times the maximum working load.

(b) The lowering mechanism for the lifeboat must be operative from the lifeboat and from the unit.

(c) Each exposed wire fall on a unit must have a cover or means of protection from damage or fouling.

(d) The winch controls on the unit must be located where the operator can observe the lifeboat launching.

§ 108.508 Launching equipment for davit launched inflatable liferafts.

(a) Each unit must have the following launching equipment at each launching station:

(1) Winches that are approved by the Commandant (G-MMT).

(2) Mechanical disengaging apparatus that is approved by the Commandant (G-MMT).

(3) Davits that are approved by the Commandant (G-MMT).

(4) Load bearing components that meet §§ 108.507(a)(5), 108.507(c), and 108.509.

(5) A means to hold the liferaft in a location that allows a person to enter the liferaft.

(6) A means to rapidly retrieve the falls if the station has more than one liferaft.

(b) The launching equipment must be capable of being operated by a person in the liferaft and a person on the unit.

(c) The winch controls on the unit must be located where the operator can observe the liferaft launching.

(d) The launching equipment must be arranged so that a loaded liferaft does not have to be lifted before it is lowered.

(e) Not more than two liferafts may be launched from the same set of launching equipment.

§ 108.509 Wire fall fleet angle.

(a) "Fleet angle" is the angle made by two lines that intersect at the center of the sheave. One line is perpendicular to the axis of the drum and the other passes through either end of the drum at its axis.

(b) The portion of a wire fall between the drum of a winch on a unit and the first sheave over which the wire fall passes must have a fleet angle that is less than 8 degrees if the drum is a grooved drum and less than 4 degrees if the drum is a nongrooved drum.

§ 108.510 Hydrostatic releases.

Each inflatable liferaft that is not intended for davit launching must have—

(a) A hydrostatic release approved under Subpart 160.062 of this chapter; or

(b) A means to ensure that the liferaft will float free if the unit sinks.

§ 108.511 Lifeboat and liferaft arrangement.

The lifeboats and liferafts on a unit must be arranged—

(a) To provide ready access to them;

(b) So that a fire or other casualty does not immobilize all lifeboats and liferafts;

(c) So that they are accessible for inspection, maintenance, and testing;

(d) In locations clear of overboard discharge lines, propellers, and hull obstructions; and

(e) In locations to launch as designed.

§ 108.514 Life preservers.

(a) Each unit must have enough adult life preservers for 125% of the persons allowed on board.

(b) Each unit must have lockers, boxes, closets, shelves, or racks in readily accessible locations in berthing areas, watch stations, or other work areas for the stowage of life preservers. The stowage containers must not be capable of being locked.

(c) Each life preserver on a unit must be approved under Subpart 160.002, 160.005, or 160.055 of this chapter as a Type I—personal flotation device.

(d) Each life preserver on a unit must have a whistle that is—

(1) Of a ball-type;

(2) Corrosion resistant; and

(3) Attached to the life preserver by a 1 meter (3 foot) lanyard that—

(i) Does not have hooks, snaps, clips, or other metal connecting devices;

(ii) Allows the whistle to extend at least 38 centimeters (15 inches) from the top of the life preserver; and

(iii) Is coiled and bound with breakable thread.

(e) Each life preserver carried on a unit after June 30, 1980, must have a personal flotation device light that is approved under Subpart 161.012 of this chapter. Each light must be securely attached to the front shoulder area of a life preserver.

(f) Each life preserver carried on a unit after June 30, 1980, must have at least 200 sq. cm (31 sq. in.) of retroreflective material attached on its front side, at least 200 sq. cm on its back side, and at least 200 sq. cm of material on each of its reversible sides. The material must be Type I material that is approved under Subpart 164.018 of this chapter. The material attached on each side of a life preserver must be divided equally between the upper quadrants of the side, and the material in each quadrant must be attached as closely as possible to the shoulder area of the life preserver.

(46 U.S.C. 375, 390b, 391a, 416, 481, 526p, 1454, and 1488; 49 U.S.C. 1655(b); 50 U.S.C. 198; and 49 CFR 1.46)

[CGD 73-251, 43 FR 56825, Dec. 4, 1978, amended by CGD 76-028, 44 FR 38784, July 2, 1979]

108.515 Ring life buoys.

(a) Each unit must have at least eight ring life buoys and mounting racks.

(b) Each ring life buoy on a unit must—

(1) Have a mounting rack that secures the buoy and allows it to be easily removed from the rack;

(2) Be approved under Subpart 160.009 or 160.050 of this chapter.

(c) At least four ring life buoys on a unit must each have a waterlight attached to the bouy by a 1 to 2 meters (3 to 6 foot) lanyard. Each waterlight must be approved under Subpart 161.012 of this chapter.

(d) At least two ring life buoys that have water light must each—

(1) Have a smoke signal approved under Subpart 160.057 of this chapter that self-activates when the ring life buoy is released from its mounting rack;

(2) Have a releasing mechanism that can be operated from the bridge, except that if the bridge is not continuously manned the mechanism must be capable of operation from a location authorized by the OCMI; and

(3) Be mounted in a location where the buoy, if released by the releasing mechanism, will drop into the water.

(e) At least one ring life buoy on each side of the unit, excluding those required by paragraph (d), must have a buoyant line attached to the buoy that is 1½ times the distance from the buoy to the design waterline of the unit or 15 fathoms in length, whichever is greater. The end of the line must not be secured to the unit.

(f) Each ring life buoy on a unit must be readily accessible to persons on board.

§ 108.517 Line throwing appliance.

(a) Each unit on an international voyage must have at least one impulse projected rocket type line throwing appliance that is approved under Subpart 160.040 of this chapter.

(b) Each unit not on an international voyage must have—

(1) An impulse projected rocket type line throwing appliance that is approved under Subpart 160.040 of this chapter; or

(2) A shoulder type line throwing gun approved under Subpart 160.031 of this chapter.

§ 108.519 Portable radio apparatus.

Each unit on an international voyage must have a portable radio apparatus that meets the requirements of the Federal Communications Commission.

§ 108.521 Distress signals.

(a) Each unit must have at least 12 hand held, rocket-propelled, parachute, red flare, distress signals. Each distress signal on a unit must be approved under Subpart 160.036 of this chapter.

(b) Each distress signal must be stowed in a portable, watertight, and noncorrosive container on the bridge or, if the unit does not have a bridge, in the control room.

§ 108.523 EPIRB.

Each self-propelled unit must have an Class A emergency position indicating radio beacon (EPIRB). Each EPIRB on a unit must be approved under Subpart 161.011 of this chapter.

§ 108.525 Means of embarkation.

(a) Except as provided in paragraph (c), each unit must have a chain suspension ladder approved under subpart 160.017 of this chapter for each lifeboat and liferaft launching station.

(b) Each chain suspension ladder must extend to the unit's lightwaterline the unit at a 15 degree list away from the side where the ladder is installed.

(c) If a chain suspension ladder cannot be supported against a vertical flat surface, a fixed ladder must be installed; however no more than four fixed ladders are required.

(d) Each inclined fixed ladder must—

(1) Be at least 71 centimeters (28 inches) wide; and

(2) Have a pitch of 50° or less.

(e) Each vertical fixed ladder must meet the requirements of § 108.160 for Fixed Ladders, except that vertical bars in cages must be open at least 50 centimeters (20 inches) on one side for the length of the ladder.

§ 108.527 Additional means of abandonment.

Portable slides, safety booms, moveable ladders, elevators, and other means of abandonment may be installed if approved by the Commandant.

Subpart F—Cranes and Power Operated Industrial Trucks

CRANES

§ 108.601 Crane design.

(a) Each crane and crane foundation on a unit must be designed in accordance with the American Petroleum Institute Specification for Offshore Cranes, API Spec. 2C, Second Edition, February, 1972 (with supplement 2).

(b) In addition to the design requirements of paragraph (a), each crane must have the following:

(1) Each control marked to show its function.

(2) Instruments with built-in lighting.

(3) Fuel tank fills and overflows that do not run onto the engine exhaust.

(4) No gasoline engines.

(5) Spark arrestors fitted on engine exhaust pipes.

POWER OPERATED INDUSTRIAL TRUCKS

§ 108.611 Power operated industrial trucks: Definition.

For the purposes of § 108.613 through § 108.615, "power industrial truck" means a tractor, lift truck, or specialized industrial truck used for material handling on a unit.

§ 108.613 Power operated industrial trucks.

(a) Each power operated industrial truck used on a unit must have a type designation as follows:

(1) "E"—electrically powered trucks that have safeguards against inherent sources of ignition.

(2) "EE"—electrically powered trucks that have the requirements for "E" trucks, and completely enclosed electric motors and equipment.

(3) "EX"—electrically powered trucks whose electrical fittings and equipment are designed, constructed, and assembled to permit the trucks to be used in atmospheres containing flammable vapors or dusts.

(4) "D"—diesel powered trucks that have safeguards against inherent sources of ignition.

(5) "DS"—diesel powered trucks that are provided with safeguards to the exhaust, fuel, and electrical systems not provided on a "D" truck.

(b) Each power operated industrial truck used on a unit must be approved and designated by a testing laboratory listed in paragraph (c) of this section.

(c) The following testing laboratories are accepted for the purposes of this section:

(1) Underwriters' Laboratories, Inc., P.O. Box 247, Northbrook, Illinois, 60092.

(2) Factory Mutual Laboratories Engineering Division, 1115 Boston Providence Turnpike, Norwood, Massachusetts 02062.

(d) Each power operated industrial truck used on a unit must have at least the following safety features:

(1) A warning device that can be heard above normal background noises.

(2) A driver's overhead guard if, during normal operations, the operator may be exposed to falling objects.

(3) If the truck has a fork lift—

(i) A vertical load back rest extension or rack to prevent the load from falling toward the driver when the mast is in a position of maximum backward tilt;

(ii) A means of securing the forks to the carriage to prevent unintentional lifting of the toe;

(iii) A means of securing fork extensions and other attachments to prevent lifting or displacement on the primary forks; and

(iv) A factor of safety for the forks of at least three to one, based on the elastic limit of the fork material.

(4) Guards on each exposed wheel to prevent the wheel from throwing particles at the operator.

(5) Steering controls that are—

(i) Within the clearances of the truck; or

(ii) Guarded so that movement of the controls will not result in injury to the operator when the truck is passing an obstruction.

(e) A steering knob may be mounted within the perimeter of the wheel, if used on a steering mechanism that allows the wheel to spin as a result of road action. The steering knob must be—

(1) A mushroom type that engages the palm of the operator's hand; or

(2) Arranged in some other manner to prevent injury to the operator.

§ 108.615 Charging facilities for battery powered industrial trucks.

Each supply or charging circuit for charging batteries of powered industrial trucks must be connected to the truck by a portable plug that is—

(a) Break away type; and

(b) Connected to the charging outlet so that any movement of the truck away from the charging station—

(1) Breaks the connection;

(2) Does not expose any live parts to contact with a conducting surface or object; and

(3) Does not allow the plug to fall on to the deck.

Subpart G—Equipment Markings and Instructions

§ 108.621 Equipment markings: General.

Unless otherwise provided, each marking required in this subpart must be—

(a) Printed in English;

(b) In red letters with a contrasting background;

(c) Permanent;

(d) Easy to be seen;

(e) At least 1.3 centimeters (½ inch) in height.

§ 108.623 General alarm bell switch.

Each general alarm bell switch must be marked "GENERAL ALARM" on a plate or other firm noncorrosive backing.

§ 108.625 General alarm bell.

Each general alarm bell must be identified by marking "GENERAL ALARM—WHEN BELL RINGS GO TO YOUR STATION" next to the bell.

§ 108.627 Carbon dioxide alarm.

Each carbon dioxide alarm must be identified by marking: "WHEN ALARM SOUNDS VACATE AT ONCE. CARBON DIOXIDE BEING RELEASED" next to the alarm.

§ 108.629 Fire extinguishing system branch line valve.

Each branch line valve of each fire extinguishing system must be marked with the name of the space or spaces it serves.

§ 108.631 Fixed fire extinguishing system controls.

(a) Each cabinet or space that contains a valve, control, or manifold of a fixed fire extinguishing system must be marked by one of the following: "CARBON DIOXIDE FIRE APPARATUS", "FOAM FIRE APPARATUS", or "WATER SPRAY FIRE APPARATUS" in letters at least 5 centimeters (2 inches) high.

(b) Instructions for the operation of a fixed fire extinguishing system must be posted next to a fire apparatus described in paragraph (a) of this section.

§ 108.633 Fire stations.

Each fire station must be identified by marking: "FIRE STATION NO. —" next to the station in letters and numbers at least 5 centimeters (2 inches) high.

§ 108.635 Self-contained breathing apparatus.

Each locker or space containing self-contained breathing apparatus must be marked: "SELF CONTAINED BREATHING APPARATUS".

§ 108.636 Work vests.

Each space containing a work vest must be marked: "WORK VEST".

§ 108.637 Hand portable fire extinguishers.

(a) Each hand portable fire extinguisher must be marked with a number that identifies it in relation to all other hand portable fire extinguishers.

(b) The location of each hand portable fire extinguisher must be marked with the same number that is marked on the extinguisher.

§ 108.639 Emergency lights.

Each emergency light must be marked: "E".

§ 108.641 Instructions for changing steering gear.

Instructions stating, in order, the different steps to be taken for changing to emergency and secondary steering gear must be posted in the steering gear room and at each secondary steering station in 1.3 centimeters (½ inch) letters and numerals of contrasting color to the background.

§ 108.643 Rudder orders.

At each steering station, the direction which the wheel or steering device must be moved for right rudder or left rudder must be marked in letters of contrasting color to the background on the wheel or steering device or in a place that is directly in the helmsman's line of vision to indicate "RIGHT RUDDER" and "LEFT RUDDER".

§ 108.645 Lifeboats.

(a) The bow of each lifeboat must be marked in letters and numbers of contrasting color to the background with—

(1) The name and port of registry of the unit in letters at least 7.5 centimeters (3 inches) high;

(2) The number of the boat in numbers at least 7.5 centimeters (3 inches) high; and

(3) The number of persons allowed in the boat in letters and numbers at least 4 centimeters (1½ inches) high.

(b) Each mechanical disengaging apparatus control lever must be colored red with the following marked on or next to the lever: "DANGER-LEVER DROPS BOAT" or "DANGER-LEVER RELEASES HOOKS".

(c) The location of each mechanical disengaging apparatus control lever located at or below seat level must be marked by a band of color contrasting to its surroundings approximately 30 centimeters (12 inches) wide from the keel to each side bench. Each mechanical disengaging apparatus control located above seat level must be on a background that contrasts with its red color.

§ 108.647 Inflatable liferafts.

Each inflatable liferaft must be identified by marking: "INFLATABLE LIFERAFT NO. — . . . . PERSONS CAPACITY" on a sign next to the liferaft or its container—

(a) in letters at least 4 centimeters (1½ inches) high; and

(b) in a contrasting color to the background.

§ 108.649 Life preservers and ring life buoys.

(a) Each life preserver must be marked in a color in contrast to the life preserver with the unit's name.

(b) Each locker box or closet used for stowing life preservers must be marked "LIFE PRESERVERS".

(c) Each ring life buoy must be marked in a color in contrast to the ring lifebuoy with the unit's name and port of registry.

§ 108.651 Portable magazine chests.

Each portable magazine chest must be marked: "PORTABLE MAGAZINE CHEST — FLAMMABLE — KEEP LIGHTS AND FIRE AWAY" in letters at least 7.5 centimeters (3 inches) high.

§ 108.653 Helicopter facilities.

(a) Each helicopter fueling facility must be marked adjacent to the fueling hose storage: "WARNING — HELICOPTER FUELING STATION — KEEP LIGHTS AND FIRE AWAY".

(b) Each storage tank for helicopter fuel must be marked: "DANGER — FLAMMABLE LIQUID".

(c) Each access to a helicopter landing area must be marked: "BEWARE OF TAIL ROTOR".

(d) Each marking required by this section must be in letters at least 7.5 centimeters (3 inches) high.

§ 108.655 Lifeboat and liferaft instructions.

Placards approved by the Commandant that contain instructions for launching lifeboats and liferafts and inflating inflatable liferafts must be conspicuously posted.

§ 108.657 Unit markings.

The hull of each unit must be marked in accordance with Parts 67 and 69 of this chapter.

§ 108.659 Breeches buoy and lifesaving signal instructions.

Instructions on Form CG-811 for the use of breeches buoys and lifesaving signals must be posted so that they can be easily seen in the pilothouse or control room, engine room, each messroom, and each recreation room.

§ 108.661 Unit markings: Draft marks.

(a) Each unit must have draft marks for each foot of immersion—

(1) If the unit is a surface unit, on both the port and starboard sides of the stem and the stern-post or rudderpost or at any other place at the stern of the unit as may be necessary for easy observance;

(2) If the unit is a self-elevating unit, near each corner of the hull but not more than 4 required; and

(3) If the unit is a column-stabilized unit, on each corner column, continu-

ing to the footing or lower displacement hull.

(b) The bottom of each mark must be at the draft indicated by that mark.

(c) Each mark must be—

(1) In numerals 15 centimeters (6 inches) high; and

(2) In contrasting color to the background.

(d) For the purposes of this section, "draft" means the distance from the bottom of the keel or the lowest shell plate on the outer surface of the unit to the surface of the water, except that where a unit has a permanent appendage extending below the bottom of the keel, "draft" means the distance from the lowest part of the appendage to the surface of the water.

§ 108.663 Unit markings: Load line.

Each unit that is assigned a load line must have the load line marked in accordance with Part 42 of this Chapter.

§ 108.665 Appliances for watertight integrity.

Each watertight door, scuttle, and hatch required for watertight integrity, which may be opened during normal operations must be marked in letters of contrasting color to the background "KEEP CLOSED".

Subpart H—Miscellaneous Equipment

§ 108.697 Buoyant work vest.

Each buoyant work vest on a unit must be approved under § 160.053 of this Chapter.

§ 108.699 Substitution of life preservers.

A work vest may not be substituted for a required life preserver—

(a) For the life saving equipment requirements of this part; or

(b) For use during drills and emergencies.

§ 108.701 Sounding equipment.

Each self-propelled unit must have a mechanical or electronic sounding apparatus.

§ 108.703 Self-contained breathing apparatus.

(a) Each unit must have a self-contained breathing apparatus to be used as protection from gas leaking from a refrigeration unit.

(b) The self-contained breathing apparatus required in § 108.497 may be used for this purpose.

§ 108.705 Anchors, chains, wire rope, and hauser.

(a) Each unit must be fitted with anchors, chains, wire rope, and hausers in agreement with the standards established by the American Bureau of Shipping.

(b) Units which are equipped with anchors used as operational equipment are not required to have additional anchors if the operational anchors meet the requirements of paragraph (a).

§ 108.707 First aid kit.

Each unit must have a first-aid kit approved by the Mine Safety and Health Administration (Formerly Mining Enforcement and Safety Administration) of a size suitable for the number of persons allowed on board the unit that is stowed in a location that is accessible to persons on board.

§ 108.709 Litter.

Each unit must have a litter that is—

(a) Stowed in a location that is accessible to the persons on board; and

(b) Capable of being used on the type of helicopters serving the unit.

§ 108.711 Pilot ladders.

(a) Except as provided in paragraph (c), each unit which normally uses a pilot must have a pilot ladder in addition to the ladders required in § 108.525.

(b) Each unit which has a pilot ladder must have the following:

(1) Spreaders.

(2) A man rope.

(3) A safety line.

(c) A pilot ladder is not required if there is no flat vertical surface to support a pilot ladder.

(d) Illumination over the side of the unit and on the deck where the pilot boards the unit must be provided.

§ 108.713 International Code of Signals.

Each vessel on an international voyage which is required to carry a radiotelegraph or radiotelephone installation in accordance with Chapter IV of the Safety of Life at Sea Convention, 1960, must carry the International Code of Signals.

§ 108.715 Magnetic compass and gyrocompass.

(a) Each self-propelled unit in ocean or coastwise service must have a magnetic compass.

(b) Each self-propelled unit of 1,600 gross tons and over in ocean or coastwise service must have a gyrocompass in addition to the magnetic compass required in paragraph (a).

(c) Each unit that is required to have a gyrocompass must have an illuminated repeater for the gyrocompass that is at the main steering stand unless the gyrocompass is illuminated and is at the main steering stand.

§ 108.717 Radar.

Each self-propelled unit of 1,600 gross tons and over in ocean or coastwise service must have—

(a) A marine radar system for surface navigation; and

(b) Facilities on the bridge for plotting radar readings.

PART 109—OPERATIONS

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APPENDIX A—NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 3-78—INSPECTION AND CERTIFICATION OF EXISTING MOBILE OFFSHORE DRILLING UNITS

AUTHORITY: Sec. 2, 87 Stat. 418 (46 U.S.C. 86); sec. 3, 82 Stat. 341, as amended (46 U.S.C. 367); R.S. 4405, as amended (46 U.S.C. 375); sec. 10, 35 Stat. 428 (46 U.S.C. 395); R.S. 4423, as amended (46 U.S.C. 400); R.S. 4429, as amended (46 U.S.C. 407); R.S. 4430, as amended (46 U.S.C. 408); 88 Stat. 423 (46 U.S.C. 411); R.S. 4434, as amended (46 U.S.C. 412); R.S. 4462, as amended (46 U.S.C. 416); sec. 1, 73 Stat. 475 (46 U.S.C. 481); sec. 4, 67 Stat. 462 (43 U.S.C. 1333(d)); sec. 6(b)(1), 80 Stat. 937 (49 U.S.C. 1655(b)(1)); 49 CFR 1.46(b) and (n)(6), unless otherwise noted.

SOURCE: CGD 73-251, 43 FR 56828, Dec. 4, 1978, unless otherwise noted.

Subpart A—General

§ 109.101 Applicability.

No unit may be operated unless it complies with the regulations in this part.

§ 109.103 Requirements of the International Convention for Safety of Life at Sea, 1960.

No self-propelled unit of more than 500 gross tons may embark on an international voyage unless it is issued the appropriate Convention certificate as described in §§ 107.401 through 107.413 of this subchapter.

§ 109.107 Designation of master or person in charge.

The owner of a unit or his agent shall designate an individual to be the master or person in charge of the unit.

§ 109.109 Responsibilities of master or person in charge.

(a) The master or person in charge shall—

(1) Ensure that the provisions of the Certificate of Inspection are adhered to; and

(2) Be fully cognizant of the provisions in the operating manual required by § 109.121.

(b) Nothing in this subpart shall be construed as limiting the master or person in charge, at his own responsibility, from diverting from the route prescribed in the Certificate of Inspection or taking such steps as he deems necessary and prudent to assist vessels in distress or for other emergency conditions.

§ 109.121 Operating manual.

(a) An operating manual must be prepared for each unit.

(b) Each operating manual must be approved by the Commandant (G-MMT).

(c) The operating manual must contain guidance for the safe operation of the unit under normal and emergency conditions.

(d) The operating manual must contain the following information:

(1) A general description of the unit, including lightship data.

(2) Data for each operating mode, including design loading, wave height, and draft.

(3) General arrangement showing watertight compartments, closures, vents, permanent ballast, and allowable deck loadings.

(4) Hydrostatic curves or equivalents.

(5) Capacity plan showing capacities of tanks, center of gravity, free surface corrections, and instructions for applying them.

(6) Instructions for the operation of the unit while—

(i) Preparing for the passage of a severe storm, including the specific actions and approximate length of time necessary to attain each level of preparedness; and

(ii) Change of operating condition, including preparations prior to making a move.

(7) Stability information setting forth maximum KG versus draft curve, or other parameters, based upon compliance with the intact and damaged stability criteria.

(8) Examples of loading conditions for each mode of operation, and a means for evaluation of other loading conditions.

(9) Inherent limitations of operation for each operating mode.

(10) General guidance and precautions regarding unintentional flooding.

(11) A table of contents and index for the manual.

Subpart B—Tests, Drills, and Inspections

§ 109.201 Steering gear, whistles, general alarm, and means of communication.

The master or person in charge shall ensure that—

(a) Steering gear, whistles, general alarm bells, and means of communication between the bridge or control room and the engine room on self propelled units are inspected and tested—

(1) Within 12 hours before getting under way; and

(2) At least once each week if under way or on station; and

(b) Whistles and general alarm bells on all other units are inspected examined and tested at least once each week.

§ 109.203 Sanitation.

(a) The master or person in charge shall insure that the accommodation spaces are in a clean and sanitary condition.

(b) The chief engineer, or engineer in charge if no chief engineer is required, shall insure that the engineering spaces are in a clean and sanitary condition.

§ 109.205 Inspection of boilers and machinery.

The chief engineer or engineer in charge, before he assumes charge of the boilers and machinery of a unit shall inspect the boilers and machinery, other than industrial machinery, and report to the master or person in charge and the Officer in Charge, Marine Inspection, any parts that are not in operating condition.

§ 109.207 Line-throwing equipment.

(a) The master or person in charge shall insure that personnel are instructed in the use of line-throwing equipment.

(b) The master or person in charge shall insure that each line throwing appliance is tested by firing it at least once every four months. The use of a service line is not required for test firing.

§ 109.208 EPIRB.

The master or person in charge shall insure that each EPIRB required in § 108.523 of this subchapter is tested monthly using the integrated test circuit and output indicator.

§ 109.209 Appliances for watertight integrity.

(a) Before getting underway, the master or person in charge shall insure that each appliance for watertight integrity is closed and watertight.

(b) If existing conditions warrant, the master or person in charge may permit appliances for watertight integrity to be open while afloat.

§ 109.211 Testing of emergency lighting and power systems.

(a) The master or person in charge shall insure that—

(1) each emergency lighting and each emergency power system is tested at least once each week;

(2) each emergency generator is tested at least once each month by operating it under load for at least 2 hours; and

(3) each storage battery for emergency lighting and power systems is tested every six months under actual connected load for a period of at least 2 hours.

(b) After the 2 hour test period required in paragraph (a)(3) of this section, the voltage values under load or specific gravity of electrolyte must be measured. Measured values must be extrapolated to approximate the values that would result following a 12 hour test period. The test must be extended if a trend cannot be determined to allow extrapolation. The capacity of the battery corresponding to the extrapolated values of voltage or specific gravity must be sufficient to supply the actual connected load.

§ 109.213 Fire drill.

The master or person in charge shall conduct a fire drill at least once each week and shall insure that—

(a) All personnel report to their stations, and demonstrate their ability to perform the duties assigned to them in the station bill;

(b) Each fire pump is started;

(c) Each item of rescue and safety equipment is brought from the emergency equipment lockers; and

(d) Each watertight door which is in use while the unit is underway is operated.

§ 109.215 Boat drill.

The master or person in charge shall conduct a boat drill at least once each week, and shall insure that—

(a) All personnel report to their stations, and demonstrate their ability to perform the duties assigned to them in the station bill;

(b) Each lifeboat is prepared for use;

(c) Weather permitting, at least one lifeboat is partially lowered, and its engine started and operated; and

(d) Each person not assigned duties in the station bill is instructed in the use of life preservers.

§ 109.217 Lifeboats and lifeboat launching equipment: Inspection and testing.

The master or person in charge shall insure that—

(a) Each lifeboat is lowered to the water launched and operated at least once each three months as part of a boat drill required by § 109.215;

(b) Each lifeboat is properly equipped;

(c) The motor of each motor propelled lifeboat is operated in the ahead and the astern position at least once each week;

(d) Each lifeboat is cleaned and inspected at least once each year;

(e) The fuel tank of each motor propelled lifeboat is emptied, and the fuel is changed at least once each year;

(f) Each rechargeable battery for each lifeboat radio is fully charged at least once each week; and

(g) Each lifeboat radio transmitter is tested at least once each week.

§ 109.219 Inflatable liferaft: Servicing.

The master or person in charge shall insure that each inflatable liferaft is serviced, every 12 months or not later than the next inspection for certification: *Provided*, The time since the date of the last servicing does not exceed 15 months. Except in emergency, no servicing may be done aboard the unit.

§ 109.221 Electric power operated winches.

(a) The master or person in charge shall insure that each lifeboat winch control apparatus, including motor controllers, emergency switches, master switches, and limit switches, is inspected at least once each 3 months.

(b) The inspection required in paragraph (a) of this section must include the removal of drain plugs from the electrical enclosures of each lifeboat winch control apparatus.

§ 109.223 Fire fighting equipment.

The master or person in charge shall insure that each hand portable fire extinguisher, semi-portable fire extinguisher, and fixed fire-extinguishing system is tested and inspected at least once each twelve months.

§ 109.225 Personal flotation device lights.

(a) Each personal flotation device light that has a non-replaceable power source must be replaced on or before the expiration date of the power source.

(b) Each replaceable power source for a personal flotation device light must be replaced on or before its expiration date and the light must be replaced when it is no longer serviceable.

(46 U.S.C. 375, 390b, 391a, 416, 481, 526p, 1454, and 1488; 49 U.S.C. 1655(b); 50 U.S.C. 198; and 49 CFR 1.46)

[CGD 76-028, 44 FR 38785, July 2, 1979]

Subpart C—Operation and Stowage of Safety Equipment

§ 109.301 Maintenance of equipment.

The master or person in charge shall insure that each item of lifesaving and firefighting equipment required by this subchapter is maintained in operative condition.

§ 109.305 Obstruction on launching decks.

The master or person in charge shall insure that each deck from which lifeboats are launched is kept clear of any obstruction that interferes with the immediate launching of lifeboats and liferafts.

§ 109.307 EPIRB.

The master or person in charge shall insure that—

(a) Each EPIRB required in § 108.523 is stowed in a manner so that it will float free if the unit sinks.

(b) Each battery of the EPIRB is replaced before the date marked on the EPIRB battery, or after the EPIRB is used.

§ 109.313 Stowage of life preservers.

The master or person in charge shall insure that each life preserver required in § 108.514 for each person assigned a berth, is stowed in his berthing area as provided in § 108.514(b), and that the remaining life preservers required in § 108.514(a) are stowed in each work area and watch station as provided in § 108.514(b).

§ 109.317 Replacement of distress signal and self-activated smoke signals.

The master or person in charge shall insure that each distress signal and self-activated smoke signal is replaced not later than 36 months after the date of manufacture or not later than the date of expiration, whichever date is marked on the signal.

§ 109.320 Line-throwing equipment.

The master or person in charge shall insure that—

(a) The line throwing equipment required by § 108.517 is stowed in a readily accessible location;

(b) The service life of rockets for impulse projected rocket type equipment is limited to a period of four years from the date of manufacture, and replacement of out-dated items made at the first arrival in the United States, except that replacement is made in all cases within twelve months after the date of expiration; and

(c) The line-throwing equipment is not operated in an explosive atmosphere.

§ 109.321 Portable radio.

The master or person in charge shall insure that the portable radio required in § 108.519 is—

(a) Stowed in the radioroom, bridge, or a protected location near a lifeboat; and

(b) Readily accessible for transfer to a lifeboat.

§ 109.323 Manning of lifeboats and inflatable liferafts.

The master or person in charge shall—

(a) Assign to each lifeboat and each inflatable liferaft to which seat assignments are made in the station bill—

(1) A licensed deck officer, able seaman, or certificated lifeboatman to command the lifeboat;

(2) A licensed deck officer, able seaman, or certificated lifeboatman as second in command, if the lifeboat has a capacity of more than 40 persons;

(3) A person who can operate the lifeboat's motor; and

(4) A person who can operate the portable radio, if the lifeboat has a portable radio; and

(b) Insure that the person assigned to command a lifeboat or inflatable liferaft has a list of the persons, by station bill number and job title, assigned to seats in the lifeboat or liferaft.

§ 109.325 Persons in command of lifeboats or liferafts.

A person assigned to command a lifeboat or liferaft shall insure that each person assigned to the lifeboat or liferaft can perform the duties assigned to that person.

§ 109.329 Fire pumps.

The master or person in charge shall insure that at least one of the fire pumps required in § 108.415 is ready for use on the fire main system at all times.

§ 109.331 Firehoses and hydrants.

The master or person in charge shall insure that—

(a) At least one length of firehose with a combination nozzle is connected to each fire hydrant required by this subchapter, at all times, except that during heavy weather a firehose in an exposed location may be temporarily removed from the fire hydrant and stowed in an accessible, nearby location;

(b) A fire hose required by this subchapter is not used for any purpose other than firefighting, fire drills, and testing;

(c) Access to each fire hydrant is not blocked;

(d) Each firehose, except a firehose temporarily removed from an exposed location, is stowed on a rack or reel required by this subchapter; and

(e) Each low velocity spray applicator for a fire hose nozzle is attached to the nozzle or stowed next to the fire hydrant to which the fire hose is attached.

§ 109.333 Fire main cutoff valves.

The master or person in charge shall insure that each fire main cutoff valve is open and sealed to prevent closing, except that a cutoff valve may be closed to protect the portion of the fire main system on an exposed deck from freezing.

§ 109.334 Working over water.

The master or person in charge shall insure that each person working over the water is wearing a life preserver or a buoyant work vest.

§ 109.335 Stowage of work vests.

The master or person in charge shall insure that no work vest is stowed where life preservers are stowed.

§ 109.337 Fireman's outfit.

The master or person in charge shall insure that—

(a) At least 2 persons who are trained in the use of the fireman's outfit are on board at all times; and

(b) Each fireman's outfit and its spare equipment is stowed in a separate and accessible location.

(c) A fireman's outfit is not used for any purpose other than fire fighting except as provided in § 108.703.

§ 109.339 Location of fire axes.

The master or person in charge shall insure that the fire axes required in § 108.499 of this subchapter are located in the enclosures for fire hoses marked in accordance with § 108.633 of this subchapter, if the fire axes are not located in plain view.

§ 109.341 Chain suspension ladders.

The master or person in charge shall insure that each chain suspension ladder required in § 108.525(a) of this subchapter is—

(a) Kept ready for immediate use; and

(b) Stowed near the lifeboat or inflatable liferaft davits.

§ 109.343 Pilot ladders and equipment.

The master or person in charge shall insure that—

(a) The equipment required in § 108.711(b) is kept available for use with the pilot ladder required in § 108.711(a); and

(b) One ring buoy with a waterlight is available for use when a pilot boards the unit.

§ 109.345 Pilot ladder use.

The master or person in charge shall insure that—

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(a) A pilot ladder, when in use, is secured so that each step rests firmly against the side of the unit;

(b) A pilot boards a unit by means of an accommodation ladder or personnel transfer equipment if a pilot ladder is not used.

Subpart D—Reports, Notifications, and Records

Reports and Notifications

§ 109.411 Notice of casualty.

(a) The owner, agent, master or person in charge of a vessel involved in a marine casualty shall give notice as soon as possible to the nearest Coast Guard Marine Safety or Marine Inspection Office whenever the casualty involves any of the following:

(1) All accidental groundings and any intentional grounding which also meets any of the other reporting criteria or creates a hazard to navigation, the environment, or the safety of the vessel;

(2) Loss of main propulsion or primary steering, or any associated component or control system, the loss of which causes a reduction of the maneuvering capabilities of the vessel. Loss means that systems, component parts, sub-systems, or control systems do not perform the specified or requried function;

(3) An occurrence materially and adversely affecting the vessel's seaworthiness or fitness for service or route, including but not limited to fire, flooding, or failure or damage to fixed fire extinguishing systems, lifesaving equipment, auxiliary power generating equipment, or bilge pumping systems;

(4) Loss of life;

(5) Injury causing a person to remain incapacitated for a period in excess of 72 hours;

(6) An occurrence not meeting any of the above criteria but resulting in damage to property in excess of $25,000.00. Damage includes the cost necessary to restore the property to the service condition which existed prior to the casualty, including the cost of salvage, gas freeing, and dry dock. It does not include such items as demurrage.

(b) The notice required by this section must include the following:

(1) Name and official number of the unit.

(2) Name of the owner or agent of the unit.

(3) Description of the nature and circumstances of the casualty.

(4) Location of the unit at the time of the casualty.

(5) Nature and extent of injury to persons.

(6) Damage to property.

(c) The notice required by this section is not required to be submitted if the written report of casualty required by § 109.413 is submitted without delay.

(Sec. 10, 18 Stat. 128 (33 U.S.C. 361); R.S. 4450, as amended (46 U.S.C. 239); R.S. 4405 (46 U.S.C. 375); 80 Stat. 938 (49 U.S.C. 1655(b)(1); 49 CFR 1.46(b)))

[CGD 73-251, 43 FR 56828, Dec. 4, 1978, as amended by CGD 76-170, 45 FR 77443, Nov. 24, 1980]

§ 109.413 Written report of casualty.

The master or person in charge of a unit for which a report of casualty is made under § 109.411 shall submit a report to the Officer in Charge, Marine Inspection, as soon as possible after the casualty occurs, on—

(a) Form CG-924E if the casualty involves injury to persons or loss of life; and

(b) Form CG-2692 if the casualty involves damage to property or grounding or stranding of a vessel except when the unit is grounded to conduct normal operations.

§ 109.415 Retention of records after casualty.

(a) The owner, agent, master, or person in charge of a unit for which a report of casualty is made under § 109.411 shall insure that all records maintained on the unit are retained on board the unit for at least 3 months after the report of casualty is made or until advised by the Officer in Charge, Marine Inspection, that records need not be retained on board.

(b) The records which must be retained in accordance with paragraph (a) of this section include:

(1) Rough and smooth deck log.

(2) Rough and smooth engine room log.
(3) Tour reports.
(4) Bell books.
(5) Navigation charts in use at the time of casualty.
(6) Navigation work books.
(7) Compass deviation cards.
(8) Gyrocompass records.
(9) Storage plans.
(10) Record of drafts.
(11) Notices to mariners.
(12) Radiograms sent and received.
(13) The radio log.
(14) Personnel list.
(15) Crane record book.

(c) The owner, agent, master, or person in charge shall, upon request, make the records described in this section available for examination by any Coast Guard official authorized to investigate the casualty.

§ 109.417 Report of damage to aid to navigation.

If a unit collides with an aid to navigation maintained by the Coast Guard, the master or person in charge shall report the collision to the appropriate Officer in Charge, Marine Inspection.

§ 109.419 Report of unsafe machinery.

If a boiler, unfired pressure vessel, or other machinery on a unit is unsafe to operate, the master or person in charge shall report the existence of the unsafe condition to the Officer in Charge, Marine Inspection.

§ 109.421 Report of repairs to boilers and pressure vessels.

Before making repairs, except normal repairs and maintenance such as replacement of valves or pressure seals, to boilers or unfired pressure vessels in accordance with § 50.05-10 of this chapter, the master or person in charge shall report the nature of the repairs to the Officer in Charge, Marine Inspection.

§ 109.423 Report of breaking safety valve seal.

(a) If a required seal on a boiler safety valve is broken, the chief engineer or engineer in charge shall notify the Officer in Charge, Marine Inspection.

(b) The notice must—
(1) State the reason for breaking the seal; and
(2) Request that the valve be examined and adjusted.

§ 109.425 Repairs and alterations: Emergency equipment.

(a) Before making repairs or alterations, except emergency repairs or alterations, to lifesaving, fire detecting or extinguishing equipment, the master or person in charge shall report the nature of the repairs or alterations to the Officer in Charge, Marine Inspection.

(b) When emergency repairs or alterations to lifesaving, fire detecting or fire extinguishing equipment have been made, the master or person in charge shall report the nature of the repairs or alterations to the Officer in Charge, Marine Inspection.

Records

§ 109.431 Logbook.

(a) The master or person in charge of a unit that is required by 46 U.S.C. 201 to have an official logbook shall maintain the logbook on Form CG-706. When the voyage is completed, the master or person in charge shall file the logbook with the Officer in Charge, Marine Inspection.

(b) The master or person in charge of a unit that is not required by 46 U.S.C. 201 to have an official logbook, shall maintain, on board, an unofficial logbook for making the entries required by this subpart. This logbook must be retained on board until the unit's next reinspection or inspection for certification.

§ 109.433 Logbook entries.[1]

The master or person in charge shall insure that the following applicable entries are made in the logbook required by this subpart:

(a) The date of each test of the steering gear, whistle, general alarm,

[1] Note: R.S. 4290 (46 U.S.C. 201) requires that certain entries be made in an official logbook, in addition to the entries required by this section; and R. S. 4291 (46 U.S.C. 202) prescribes the manner of making those entries.

and communications equipment and the condition of the equipment.

(b) The time and date of each opening and closing, while the unit is afloat, of each required appliance for watertight integrity not fitted with a remote operating control or alarm system and the reasons for the action.

(c) The date of each test of emergency lighting and power systems and the condition and performance of the equipment.

(d) the following information pertaining to each fire drill:

(1) Date and hour of each drill.

(2) Duration of each drill.

(3) The condition of all fire fighting equipment, watertight door mechanisms, and valves used during each drill.

(e) The following information pertaining to each boat drill:

(1) Date and hour of each drill.

(2) Duration of each drill.

(3) The number of each lifeboat swung out during each drill.

(4) The number of each lifeboat lowered during each drill.

(5) Length of time that each motor propelled lifeboat was operated during each drill.

(6) The condition of lifesaving equipment used during each drill.

(f) The date of the lifeboat equipment examination required in § 109.217 of this part.

(g) If a drill required in § 109.213 or § 109.215 is not held, the reasons for not holding the drill.

(h) If a drill required in § 109.213 or § 109.215 is not completed, the reasons for not completing the drill, and the date and a description of the incomplete drill.

(i) The date of each lifeboat winch inspection required in § 109.221 and the condition of the winch.

(j) Prior to getting underway, the fore and aft drafts, the position of the loadline marks in relation to the surface of the water, and the density of the water in which the vessel is floating, if in fresh or brackish water.

(k) The date of each inspection of each accommodation space.

(l) The date of each inspection required in § 109.573 if performed by the master or person in charge.

(m) The date of each test firing of the line throwing equipment required by § 109.207.

§ 109.435 Record of fire fighting equipment inspection.

(a) The master or person in charge shall ensure that a record of each test and inspection required in § 109.223 is maintained on board, until the unit is reinspected or inspected for certification.

(b) The record required in paragraph (a) of this section must show—

(1) The date of each test and inspection;

(2) The number or other identification of each item of equipment tested or inspected; and

(3) The name of the person, and the company he represents if any, who conducts the test or inspection.

§ 109.437 Crane record book.

The master or person in charge shall ensure that the following are maintained in a crane record book:

(a) Descriptive information which will identify each crane including—

(1) The API name plate data required by Section 11 of API Spec. 2C, Second Edition, February 1972; and

(2) The rates load chart for each line reeving and boom length which may be utilized.

(b) Information required by Section 3 of the American Petroleum Institute *Recommended Practice for Operation and Maintenance of Offshore Cranes*, API RP 2D, First Edition (October 1972) with supplement 1.

(c) Dates and results of frequent inspections and tests required in paragraph (b) of this section.

(d) Dates and results of periodic inspections and tests required in paragraph (b) of this section.

(e) Date and result of each rated load test.

(f) Date and description of each replacement or renewal of wire rope, hooks, and other load components.

(g) Date and description of each failure of the crane, or any component or safety feature.

(h) Date and description of each repair to the crane structure, boom, or equipment.

§ 109.439 Crane certificates.

The master or person in charge shall insure that the following certificates and records for each crane are maintained on the unit:

(a) Each certificate issued by a crane certifying authority.

(b) Each record and original certificate, or certified copy of a certificate, or manufacturers or testing laboratories, companies or organizations for—

(1) Loose gear;

(2) Wire rope; and

(3) The annealing of wrought iron gear.

Subpart E—Station Bill

§ 109.501 Station bill: Duties of personnel.

(a) The station bill must set forth the duties and station of each person during emergencies, including an assigned seat in a lifeboat or liferaft for each person on the unit.

(b) The duties must, as far as possible, be comparable with the regular work of the individual.

(c) These duties must include:

(1) Closing airports, watertight doors, scuppers, and sanitary and other discharges that lead through the unit's hull.

(2) Stopping fans and ventilating systems.

(3) Operating all safety equipment.

(4) Preparing lifeboats and life rafts for launching.

(5) Extinguishing fires.

(6) Warning personnel of the emergency.

(7) Instructing all personnel on use and wearing of their life preservers.

(8) Directing personnel to appointed stations.

(9) Carrying the portable radio apparatus, required in § 108.519, to a lifeboat.

§ 109.503 Station bill: Emergency signals.

(a) The station bill must set forth signals that—

(1) Call personnel to their stations; and

(2) Direct personnel at their stations.

(b) Emergency stations signals are established as follows:

(1) The signal to man emergency stations is a rapid succession of short soundings of both the general alarm bell and the whistle, if a whistle is installed, for a period of not less than 10 seconds.

(2) The signal to secure from emergency stations is the sounding of both the general alarm bell and the whistle, if a whistle is installed, three times.

(c) The abandon unit stations signals are established as follows:

(1) The signal to man abandon unit stations is a continuous sounding of both the general alarm and the whistle, if a whistle is installed.

(2) If whistle signals are used to direct the handling of lifeboats, they must be—

(i) One short blast to lower lifeboats; and

(ii) Two short blasts to stop lowering the lifeboats.

(3) The signal to secure from abandon unit stations is the sounding of both the general alarm bell and the whistle, if a whistle is installed, three times.

§ 109.505 Station bill: General.

The master or person in charge shall—

(a) Ensure that the station bill is prepared and maintained;

(b) Sign the station bill;

(c) Ensure that the station bill is posted in conspicuous locations on the unit;

(d) Ensure that temporary personnel and visitors are advised of their emergency stations and assigned a seat in a lifeboat or liferaft upon their arrival aboard the unit; and

(e) Ensure that all persons on the unit are familiar with the station bill.

Subpart F—Cranes and Powered Industrial Trucks

§ 109.521 Cranes: General.

The master or person in charge shall ensure that each crane is operated and maintained in accordance with the API *Recommended Practice for Operation and Maintenance of Offshore Cranes*, API RP 2D, First Edition (Oct. 1972) with supplement 1.

§ 109.525 Cranes: Working loads.

The master or person in charge shall ensure that tables indicating the maximum safe working loads for the various working angles of the boom, where the boom is rated at varying capacities depending on the radius, and the maximum and minimum radius at which the boom may be safely used, are conspicuously posted near the controls and are visible to the operator when working the crane.

§ 109.527 Cranes: Operator designation.

(a) The master or person in charge shall designate, in writing, each crane operator.

(b) The master or person in charge shall ensure that only designated operators operate cranes.

(c) The master or person in charge shall ensure that each designated operator is familiar with the provisions of the API *Recommended Practice for Operation and Maintenance of Offshore Cranes*, API RP 2D, First Edition (Oct. 1972) with supplement 1.

§ 109.529 Powered industrial trucks: Use.

The master or person in charge shall ensure that—

(a) Only "EX" designated trucks are used in Class I, Division 1 locations; and

(b) Only "EE", "EX", or "DS" designated trucks are used in—

(1) Class I, Division 2 spaces; and

(2) In spaces that are within the periphery of a Class I, Division 1 space.

§ 109.531 Powered industrial trucks: Ventilated spaces.

The master or person in charge shall ensure that diesel powered industrial trucks are operated only in ventilated spaces.

§ 109.533 Powered industrial trucks: Rated lifting capacity.

The master or person in charge shall ensure that the rated lifting capacity of each powered industrial truck is posted on each truck.

§ 109.535 Designated refueling areas for diesel powered industrial trucks.

The master or person in charge shall designate refueling areas for diesel powered industrial trucks only on—

(a) The weather deck; or

(b) In spaces that are—

(1) Ventilated to prevent accumulation of vapors; and

(2) Located at least 3 meters (10 feet) from a source of ignition.

§ 109.537 Refueling diesel powered industrial trucks: Operations.

The master or person in charge shall ensure that—

(a) Each diesel powered industrial truck is refueled only in a refueling area designated under § 109.535;

(b) Before a diesel powered industrial truck is refueled, its engine is stopped;

(c) If refueling operations are conducted in an enclosed space, no truck engine is operated in the space during refueling operations;

(d) Diesel powered industrial trucks are refueled from—

(1) A portable container of five gallons or less that has a self-closing spout; or

(2) If the refueling operation is on the weather deck, a pump with a hose that has a pistol grip, deadman nozzle; and

(e) Each designated refueling area has at least one four pound, dry chemical, portable fire extinguisher available during refueling operations.

§ 109.539 Recharging battery powered industrial trucks.

The master or person in charge shall ensure that batteries of powered industrial trucks are charged only in a ventilated area and not in a Class I location.

Subpart G—Miscellaneous

§ 109.555 Propulsion boilers.

The master or person in charge and the engineer in charge shall ensure that—

(a) Steam pressure does not exceed that allowed by the certificate of inspection; and

(b) Except as provided in § 109.423, the safety valves, once set and sealed by the inspector, are not tampered with or made inoperative.

§ 109.557 Flammable and combustible liquids: Carriage.

The master or person in charge shall ensure that—

(a) Flammable and combustible liquids in bulk are not carried, except as allowed by endorsement to the Certificate of Inspection;

(b) Portable tanks are handled and stowed in accordance with Subparts 98.30 and 98.35 of this chapter, and the provisions of 49 CFR Parts 171, 172, 173, 176, and 178 which are applicable to portable tanks; and

(c) Grades B and lower liquids are—

(1) Authorized, by the Commandant, to be carried; and

(2) Carried only in fixed independent or integral tanks.

§ 109.558 Stores and supplies.

The master or person in charge shall ensure that dangerous articles, substances, and combustible liquids which are used on board a unit, except those used in industrial operations and as fuel for the unit's machinery, are accepted, handled, stowed, and used only in accordance with the provisions for cargo vessels in Part 147 of this chapter.

§ 109.559 Explosives and radioactive materials.

Except as authorized by the master or person in charge, no person may use explosives or radioactive materials and equipment on a unit.

§ 109.563 Posting of documents.

The master or person in charge shall ensure that the following are posted under glass in the pilot house or control center:

(a) General arrangement plans for each deck showing—

(1) Each fire retardant bulkhead;

(2) Each fire detecting, manual alarm, and fire extinguishing system;

(3) Each fire door;

(4) Each means of ingress to compartments; and

(5) Each ventilating system, including the location of each damper, fan, and remote means of stopping the fans.

(b) The stability letter issued by the Coast Guard.

(c) Each SOLAS and Coast Guard certificate issued to the unit.

§ 109.564 Maneuvering characteristics.

(a) The master or person in charge of each self-propelled unit of 1,600 gross tons and over shall ensure that a maneuvering information fact sheet is prominently displayed in the pilothouse.

(b) For surface type units, the maneuvering information in Part 97.19 of this chapter must be displayed.

(c) The maneuvering information requirements for column stabilized, self-elevating, and other units of unusual design will be specified on a case by case basis.

§ 109.565 Charts and nautical publications.

The master or person in charge of a self-propelled unit shall ensure that the unit has the following adequate, up to date, and appropriate items for the intended voyage:

(a) Charts.

(b) Sailing directions.

(c) Coast pilots.

(d) Light lists.

(e) Notices to mariners.

(f) Tide Tables.

(g) Current Tables.

(h) All other nautical publications necessary.[1]

§ 109.573 Riveting, welding, and burning operations.

Except as allowed by this section—

(a) the master or person in charge shall ensure that there is no riveting, welding, or burning—

(1) In a fuel tank;

(2) On the boundary of a fuel tank;

(3) On pipelines, heating coils, pumps, fittings, or other appurtenances connected to fuel tanks; or

(4) On the boundary of spaces adjacent to tanks carrying Grades A, B, or C flammable liquids in bulk.

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[1] NOTE: For U.S. units in or on the navigable waters of the United States. See 33 CFR 164.33.

(b) The operations prohibited in paragraph (a) of this section may be allowed if—

(1) An inspection conducted in accordance with the "Standard for the Control of Gas Hazards on Vessels to be Repaired," N.F.P.A. No. 306-1974, is made—

(i) In ports or navigable waters of the United States, its territories and possessions, by—

(A) A marine chemist certified by the National Fire Protection Association; or

(B) If a certified marine chemist is not available, a person designated by the Officer in Charge, Marine Inspection; or

(ii) In all other locations by—

(A) A marine chemist certified by the National Fire Protection Association;

(B) If a certified marine chemist is not available, a person designated by the Officer in Charge, Marine Inspection; or

(C) If the persons required in paragraph (b)(ii) (A) and (B) of this section are not available, the master or person in charge; or a welding supervisor designated, in writing, by the master or person in charge; and

(2) A certificate is issued by the person conducting the inspection stating—

(i) That he conducted the inspection in accordance with the standard in paragraph (b)(1) of this section;

(ii) The operations that may be conducted; and

(iii) A list of precautions to be followed during the operations;

(c) The master or person in charge shall ensure that the precautions in paragraph (b)(2)(iii) of this section are followed.

§ 109.575 Accumulation of liquids on helicopter decks.

The master or person in charge shall ensure that no liquids are allowed to accumulate on the helicopter decks.

§ 109.577 Helicopter fueling.

(a) The master or person in charge shall designate persons to conduct helicopter fueling operations.

(b) No person may be designated to conduct such operations unless he is familiar with the fueling procedures and safety precautions.

§ 109.581 Fixed ballast.

(a) The master or person in charge shall ensure that fixed ballast is not removed from the unit or relocated unless the removal or relocation is approved by the Commandant.

(b) Fixed ballast may be moved for examination or repair of the unit if done in the presence of a marine inspector.

§ 109.583 Prevention of oil pollution.

The master or person in charge shall ensure that the unit is operated to meet the requirements in—

(a) Section 311 of the Federal Water Pollution Control Act, as amended (86 Stat. 816; 33 U.S.C. 1321);

(b) Section 12 of the Oil Pollution Act, 1961, as amended (75 Stat. 404; 33 U.S.C. 1011); and

(c) 33 CFR Parts 151, 155 and 156.

§ 109.585 Use of auto pilot.

Except as provided in 33 CFR 164.15, when the automatic pilot is used in areas of high traffic density, conditions of restricted visibility, and all other hazardous navigational situations, the master or person in charge shall ensure that—

(a) It is possible to immediately establish manual control of the unit's steering;

(b) A competent person is ready at all times to take over steering control; and

(c) The changeover from automatic to manual steering and vice versa is made by, or under the supervision of, the officer of the watch.

Appendix A—Navigation and Vessel Inspection Circular No. 3-78—Inspection and Certification of Existing Mobile Offshore Drilling Units

1. *Purpose.* To promulgate instructions for the inspection and certification of existing mobile offshore drilling units. This NVC is also being published as appendix A of 46 CFR Subchapter IA.

2. *Background.* Mobile Offshore Drilling Units are recognized internationally through the Intergovernmental Maritime Consultative Organization as being a "spe-

cial purpose ship" designed and operated to carry out an industrial function at sea. Contemporary U.S. Vessel regulations in Title 46 CFR do not adequately cover the safety considerations which are unique to the hull and structural designs, industrial equipment and operating procedures incorporated in drilling vessels. To provide appropriate and adequate standards, the Coast Guard with the assistance of the National Offshore Operations Advisory Committee, and following the provisions of the Administrative Procedures Act, developed Subchapter IA, Regulations for Mobile Offshore Drilling Units, 46 CFR Parts 107-109 and amendments to 46 CFR Subchapters "F", Marine Engineering Regulations, and "J", Electrical Engineering Regulations. These regulations, published in FEDERAL REGISTER (43 FR 56788 December 4, 1978) will apply to all units contracted for on or after the effective date of the regulations.

3. *Discussion.* a. This NVC elaborates the "grandfather provisions" of 46 CFR 107.211 and 107.215 in applying Subchapter IA to the approximately 150 *existing* ocean-going U.S. flag mobile offshore drilling units. "Existing" Mobile Offshore Drilling Units are those vessels which have been contracted for before the effective date of the regulations including:

(1) Units in Service.

(2) Units under construction.

(3) Units contracted for which are to be constructed and delivered prior to January 1, 1981.

b. Existing *uncertificated* mobile drilling units of which there are approximately 92 of the bottom bearing configuration, i.e., jack-up and submersible types, have not previously been required to comply with vessel inspection regulations. Some units have met the load line requirements of Subchapter "E" for International Voyages. Many of the older units are not classed by a classification society. Bottom bearing units operating on the Outer Continental Shelf of United States have been required to meet the safety requirements of 33 CFR Subchapter "N" as artificial islands. On January 3, 1979, existing bottom bearing units are subject to the "grandfather provisions" in paragraph 107.211(c) of Subchapter IA.

c. Existing *certificated* mobile offshore drilling units, for the purposes of this NVC, are column-stabilized and ship-shape types of which approximately 58 are currently certificated, or have made application for an original Certificate of Inspection or intend to make application for an original inspection for certification under 46 CFR Subchapter "I" on the basis of the unit being contracted for prior to the effective date of the new regulations. These units may continue to meet the structural, equipment, material and arrangement standards which were applicable to the hull, engineering, electrical and industrial systems when the units were contracted for. In addition they must meet the provisions of d.(1), d.(4)(d), d.(7)(b), d.(8), d.(9), d.(10)(b), d.(11) and d.(12) of paragraph 3 of this NVC in accordance with paragraph 107.215(c)(2) of Subchapter IA.

d. *Inspection Provisions for Existing Uncertificated Units.* The intent of the "grandfather" provisions of this NVC for existing uncertificated units is to ascertain through inspection that the material condition of the unit and its equipment meet reasonable levels of safety. To this end, the following determinations will be made:

- The design, construction and arrangements of the hull, machinery electrical and industrial systems do not reveal manifestly unsafe aspects.
- There is no excessive deterioration of the hull structure or equipment foundations.
- There are no intrinsic fire or explosion hazards.
- There are no personnel hazards such as unguarded moving machinery, potential electrical shock conditions or lack of handrails.
- The unit is seaworthy and exhibits satisfactory stability.

d.(1) *General.* (a) Repairs and minor alterations to hull structure or equipment may be made to the same standards as the original installation. However, new installations or major alterations which affect vessel or personnel safety shall meet the applicable standards of Subchapter IA.

(b) Existing items of safety equipment not meeting the applicable specifications or requirements set forth in Subchapter IA may be continued in service as long as they are maintained in good working order to the satisfaction of the OCMI. Such safety equipment and installations requiring extensive repairs shall be replaced and shall meet the applicable specifications and requirements of Subchapter IA.

(c) The OCMI has discretion to accept alternatives or equivalents which meet the established standards, and to give special consideration to departures from the regulations when it can be shown that special circumstances warrant such departures.

d.(2) *Plan Submittal.* (a) For units not classed by the American Bureau of Shipping or other recognized classification society, (see 46 CFR 108.109) the OCMI must have sufficient plans and information submitted to him which will describe such things as the unit's size, construction, configuration, arrangement of tanks, decks and spaces; and the machinery and electrical installation. In addition, the OCMI may require submittal of any additional data he considers necessary in order to proceed with the original inspections.

(b) For units classed by the American Bureau of Shipping or other recognized classification society, the plans and information described in Subchapter IA paragraphs 107.305 (a), (b), (v), and (ii) and a general description of the machinery and electrical installation shall be submitted to the OCMI for information. The OCMI may accept continued classification as proof of structural, mechanical, and electrical sufficiency. However, the OCMI may require additional plans and information if necessary.

d.(3) *Hull Structure.* (a) No structural changes will be required unless manifestly unsafe conditions exist.

(b) Existing uncertificated units must be drydocked or have a special examination in lieu of drydocking as required by 46 CFR, Section 107-261.

(c) Achievement of one compartment subdivision is not required where extensive modification of the original design would be necessary; however, watertight integrity of the hull and structural boundaries must be maintained. Bulkheads and decks designed to be watertight must be maintained as such where they are penetrated by pipes, electrical cable, reach rods, ventilation systems, etc.

d. (4) *Stability.* (a) The stability of each existing unit will be reviewed by the Coast Guard. The plans indicated in 46 CFR Subchapter IA paragraphs 107.305(q) through (u-1) must be submitted to the cognizant OCMI or Merchant Marine Technical Office.

(b) Lightship data from a Coast Guard witnessed and approved stability test is required for each existing, uncertificated unit. Alternatively other evidence of lightship values will be considered on a case by case basis.

(c) In general, compliance with the intact stability standards of 46 CFR Subchapter IA, Sections 108.303 through 108.309 is required. Where existing units were designed to a lesser standard of stability than that specified in §§ 108.303 through 108.309, some relaxation based on proven past performance may be granted at the discretion of the OCMI and limiting conditions, if any, set forth in the operating manual. In no case will the minimum wind speed for adequate stability be reduced below 50 knots.

(d) An operating manual shall be prepared for each unit. Each operating manual must contain the information indicated in 46 CFR Subchapter IA, § 109.121(d) and be submitted to the cognizant OCMI or Merchant Marine Technical Office for review.

d. (5) *Load Line.* (a) All units are required to obtain and maintain a valid Load Line Certificate. The structure and stability of the unit must be proven adequate for the voyages and areas of operation intended.

(b) The American Bureau of Shipping or other recognized classification society will issue Load Line Certificates and conduct initial and annual load line surveys. Coast Guard and the American Bureau of Shipping inspections may be conducted simultaneously, but it is the owner's responsibility to arrange coordinated inspection schedules.

(c) The structural review conducted by the American Bureau of Shipping or other recognized classification society for load line assignment may be accepted by the Coast Guard as proof of structural adequacy of the hull.

(d) The stability review must be completed prior to issuance of a Load Line Certificate. The Coast Guard will inform the American Bureau of Shipping or other recognized classification society of the results of the stability review, and will indicate any stability limitations to be placed on the Load Line Certificate.

(e) Freeboard calculations for self-elevating units with barge type hulls will be made in accordance with 46 CFR, Part 42. The bow height requirements of 46 CFR 42.20-70 may be relaxed to approximately 33% of the normal requirement for barge shapes moving at speeds less than 6 knots. No relaxation of the addition to freeboard for deficiency in sheer is allowed. The freeboard for units other than self-elevating units with barge type hulls will be based upon compliance with the intact and damage stability standards applicable at the time the unit was contracted for.

(f) All units *delivered after the date of this NVC* regardless of contract date, must obtain a Load Line Certificate as soon as operationally feasible.

d. (6) *Route and Operating Area Limitations.* (a) Units classed by the American Bureau of Shipping or other recognized classification society for ocean service generally will be certificated by the Coast Guard for ocean routes.

(b) Unclassed units which have proven structural and stability adequacy by continued safe operation in a specific geographic area, such as the Gulf of Mexico, will be limited by the Certificate of Inspection and Load Line Certificate to that area. To qualify for an unlimited oceans route, such a unit must be reviewed for adequacy of the structure and stability by the Coast Guard and meet the Load Line requirements of d. (5) above.

(c) Any unit which intends to move or operate outside the geographical area indicated on the Certificate of Inspection must receive prior approval from the OCMI.

d. (7) *Fire Protection.* (a) *Structural fire protection.* All units must meet the provisions of Section 108.123, Insulation of Combustible Materials and Section 108.127, Storage Lockers for Combustibles. All existing interior stairways which are open at each end must be enclosed at one level. On units

where wood was utilized in the construction of accommodation spaces, each space must be equipped with a smoke or heat detector either battery powered or operating on the AC power supply. All detectors must have the Underwriters Laboratories, Inc., label (UL) or the Factory Mutual Laboratories (FM) label.

(b) *Fire Extinguishing Systems.* Systems and equipment must be provided which will meet or be equivalent to the applicable specifications and provisions required by Subchapter IA. Installed fire extinguishing systems, which provide equivalent or greater protection than systems required by Subpart E, Subchapter IA may be continued in use as long as they are in good material condition and will function as designed. Where practicable, existing washdown systems may be utilized as the firemain. Where wood was utilized in the construction of accommodation spaces, the applicable reqirements of 46 CFR Subchapter IA, Table 108.495(a) should be doubled.

d. (8) *Lifesaving Equipment.* (a) Each unit must have lifesaving equipment (lifeboats and davit launched liferafts) for 200 percent of the total persons allowed on board. Except for submersible type units, the installation of lifeboats for 100 percent of the persons (on board) is required in accordance with 46 CFR Section 108.503 of Subchapter IA. Consideration will be given to those units where existing arrangement and structure do not provide sufficient room for installation of the lifeboats or where the added weight of the lifeboats, davits and winches will materially reduce the variable load capacity of the unit. In such cases, davit launched inflatable liferafts with a combined personnel capacity of the required lifeboats, and a rescue boat approved by the OCMI may be acceptable equivalents. Submersible type units may substitute Coast Guard approved throw over type inflatable liferafts and an approved rescue boat for the required lifeboats.

(b) For the second part of the total 200 percent primary lifesaving requirement, lifeboats installed in accordance with 33 CFR, Subchapter "N" Part 144 or Coast Guard approved life floats may be retained as provided for in 3.d(1)(b) of this Circular. They will be considered collectively with the Coast Guard approved liferafts for calculating the amount of equipment to provide for 100 percent of personnel on board.

(c) Adequate access to all lifesaving equipment must be provided.

d. (9) *Cranes.* (a) Plan approval will not normally be required of any crane which conforms to the specifications of the manufacturer as orginally installed. A rated load test as described in Section 107.260 of Subchapter IA will be required unless the crane has been load tested while under certification by an approved certifying authority as provided for in 46 CFR 107.258. Prior to the rated load test, the crane should be identified by manufacturer and model number to determine that the correct load rating chart is being used. The owner must submit to the OCMI details and calculations of any alterations to a crane which were accomplished without manufacturer's documentation in order to verify the rated load of the crane.

d. (10) *Electrical.* (a) Multiple power sources do not require an emergency generator; however, storage batteries or approved relay-controlled battery operated lanterns are required to be installed for the emergency lighting system and provide 12 hours of lighting.

(b) Electrical equipment installed in Class I, division 1 and 2 locations, as defined in Subchapter IA, Section 108.170 must be of a suitable type and in good material condition.

d. (11) *Unfired Pressure Vessels.* (a) Unfired pressure vessels built and stamped in accordance with Section VIII of the ASME Code may be continued in service as long as they remain in satisfactory condition. At the original and subsequent inspections for certification, ASME Code pressure vessels must be tested and examined in accordance with the requirements in 46 CFR 61.10-5.

(b) Unfired pressure vessels which cannot be identified as being constructed to any recognized standard may be continued in service provided that no obvious defects are noted. These pressure vessels shall be hydrostatically tested to one and one half times the working pressure. For pressure vessels that can not be reasonably hydrostatically tested, nondestructive testing may be used to verify the pressure vessels condition for continued serviceability. These pressure vessels will then be stamped with a Coast Guard identification number and periodically tested and examined in accordance with the requirements in 46 CFR 61.10-5.

d. (12) *Marine Sanitation Devices.* (a) All units must meet the provisions of 33 CFR Part 159, Coast Guard Marine Sanitation Devices Regulations. The discharge requirements are compatible with the OCS Orders of the U.S. Geological Survey.

4. *Action.* a. The owner of each *existing certificated* unit must provide the cognizant OCMI a proposed plan to accomplish the requirements in paragraph 3. c. of this NVC within 60 days from the effective date of the regulations. Most items should be approved at the unit's next inspection for certification; however, where major equipment installations are concerned, the owner may be allowed up to two years to comply with the requirements from the time the OCMI completes his assessment of the proposals.

b. *Application for Original Inspection for Certification.* Not later than sixty days from January 3, 1979, application for origi-

nal inspection for certification of all *existing uncertificated units*, shall be submitted to the appropriate OCMI. The plans or descriptive data specified in paragraph 3.d(2) of this NVC along with a proposed plan to bring the unit into compliance should, if possible, be submitted with the application for inspection. If not feasible to assemble all required information in this time frame, an estimated date of submittal shall be indicated on the application. Arrangements should be made to commence the original inspection for certification with due consideration for the unit's operating situation.

c. To the extent possible the same inspection team will conduct the inspection of all existing uncertificated units in a geographical area. It may be advantageous to conduct the original inspection in conjunction with an impending special or periodic survey, drydocking or availability period. Units under construction will receive primary consideration by the OCMI for the allocation of time and personnel so that any problems can be identified while the unit is in the most advantageous situation to apply corrections.

d. The variety of designs and arrangements presented by existing uninspected MODU's makes it impractical to prescribe detailed standards for all existing units. The procedures followed to implement this NVC must provide the necessary flexibility. Items which must be taken into consideration in applying this NVC are listed below. Categorizing units into groups to which the same items apply will be of value during the inspection process. These items are:

- Type
- Builder
- Model
- Date build
- Classed by ABS or other classification society
- Load Line assignment
- Operating history (including geographical areas)
- Present location

e. *Issuance of the Original Certificate of Inspection.* The intent of the original inspection of *existing uncertificated units* is to identify and commence correction of any unsafe conditions and/or equipment deficiencies and to issue the unit an original Certificate of Inspection. A reasonable period of time will be permitted to correct minor deficiencies. Those items directly affecting personnel safety and health will require immediate attention to correct the unsafe condition. Extensive deficiencies, such as those involving structural aspects or equipment may require up to two years to remedy. Additional times may be allowed if repair facilities are not available to coastal areas adjacent to the unit's area of operation. Where manifestly unsafe conditions are found, the OCMI may require that the unit discontinue operations until such conditions are corrected. If the owner or operator feels aggrieved by the decision of the OCMI, the appeals procedures of 46 CFR 2.01-70 are applicable.

f. Questions concerning this NVC should be referred to the Commandant (G-MVI).

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FINDING AIDS

A list of CFR titles, subtitles, chapters, subchapters and parts and an alphabetical list of agencies publishing in the CFR are included in the CFR Index and Finding Aids volume to the Code of Federal Regulations which is published separately and revised semiannually (January 1 and July 1).

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The Director of the Federal Register approves the following incorporations by reference for one year effective October 1, 1981, unless otherwise noted (5 U.S.C. 552(a) and 1 CFR Part 51). For more information on incorporation by reference, see the preliminary pages of this volume.

46 CFR CHAPTER I, SUBCHAPTER I	CFR Citation
COAST GUARD, DEPARTMENT OF TRANSPORTATION	
American Bureau of Shipping 65 Broadway, New York, NY 10006	
Rules for Building and Classing Steel Vessels, 1981	90.35–1; 91.15–1; 92.01–10
American Society for Testing and Materials 1916 Race St., Philadelphia, PA 19103	
ASTM D 93–80—Test for Flash Point by Pennsky-Martens Closed Tester.	97.15–55
ASTM D 323–79—Test for Vapor Pressure of Petroleum Products (Reid Method).	105.10–15
Coast Guard, G–MMT/12 2100 2nd St. SW., Washington, DC 20593	
160.014—"Compass and Mounting dated December 14, 1944" (Specification for Compasses: Magnetic, Liquid-filled, Mariners Compensating, for Lifeboats (with mounting) for Merchant Vessels), 1944.	94.20–15
Naval Publications and Forms Center, Customer Service—Code 1052 5801 Tabor Ave., Philadelphia, PA 19120	
Federal Specification: ZZ–H–451 Hose, Fire, Woven-jacketed Rubber or Cambric-Lined, with Couplings, F.	95.10–10
Inter-Governmental Maritime Consultative Organization, IMCO Sales, New York Nautical Instrument and Service Corp. 164 W. Broadway, New York, NY 10013	
A.264 (VIII)—Carriage of Grain, 1973	93.20–05
National Fire Protection Association Batterymarch Park, Quincy, MA 02269	
306—Control of Gas Hazards on Vessels, 1980	91.50–1
Underwriters Laboratories 333 Pfingsten Rd., Northbrook, IL 60062	
UL 19—Woven-jacketed, Rubber Lined Fire Hose, 1978	95.10–10
46 CFR SUBCHAPTER I–A	
COAST GUARD, DEPARTMENT OF TRANSPORTATION	
American Bureau of Shipping 65 Broadway, New York, NY 10006	
Rules for Building and Classing Offshore Mobile Drilling Units, 1980	108.113; 108.705
American National Standards Institute 1430 Broadway, New York, NY 10018	

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ANSI Z89.1–1969—Industrial Head Protection	108.497
ANSI A14.3–1974—Fixed Ladders	108.160
American Petroleum Institute 300 Corrigan Tower Bldg., Dallas, TX 75201	
API RP2D with supplement 1—Recommended Practice for Operation and Maintenance of Offshore Cranes, 1972.	107.259; 109.437; 109.521; 109.527
API Spec 2C, 2nd Edition with supplement 2 Specification for Offshore Cranes, 1972.	107.309; 108.601; 109.437
National Fire Protection Association Batterymarch Park, Quincy, MA 02269	
306—Control of Gas Hazards on Vessels, 1980	109.573
407—Standard for Aircraft Fuel Servicing, 1980	108.239
496—Standard for Purged and Pressurized Enclosures for Electrical Equipment in Hazardous Locations, 1974.	108.187
Naval Forms and Publications Center, Customer Service—Code 1052 5801 Tabor Ave., Philadelphia, PA 19120	
Federal Specification: ZZ–H–451 Hose, Fire, Woven-jacketed Rubber or Cambric-lined, with Couplings, F.	108.425
Underwriters Laboratories 333 Pfingsten Rd., Northbrook, IL 60062	
UL 19—Woven-jacketed Rubber Lined Fire Hose, 1978	108.425

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(46 CFR Parts 110–139)

Because there were no amendments to the text of the October 1, 1979, edition of 46 CFR Parts 110–139, between October 1, 1979, and September 30, 1981, that volume is being issued as a cover only in 1981. The 1979 edition of 46 CFR Parts 110–139, the 1981 cover supplement, and this Table constitutes the 1981 edition of that book.

The Director of the Federal Register approves the following incorporations by reference for one year effective October 1, 1981, unless otherwise noted (5 U.S.C. 552(a) and 1 CFR Part 51). For more information on incorporation by reference, see the preliminary pages of this volume.

46 CFR SUBCHAPTER J

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	46 CFR
American Bureau of Shipping 65 Broadway, New York, NY 10006	
Rules for Building and Classing Steel Vessels, 1981	110.10–1; 111.06–10; 111.10–5; 111.10–15; 111.30–30; 111.35–5
American Society of Mechanical Engineers 345 E. 47th St., New York, NY 10017	
ANSI A17.1–1978—American National Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks	110. 10–1; 110. 80–35
Institute of Electrical and Electronic Engineers 345 E. 47th st., New York, NY 10017	
45—Recommended Practice for Electric Installations on Shipboard, 1977	110.10–1; 111–30–5; 111.30–10; 111.60–1; 113.10–90; 113.15–90; 113.20–90
Naval Publications and Forms Center, Customer Service—Code 1052 5801 Tabor Ave., Philadelphia, PA 19120	
Military Specifications: MIL–C–915 Cable and Cord, Electrical, for Shipboard Use, 1972, with 1980 Amdt.	110.10–1; 111.60–1
MIL–W–76—Wire and Cable, Hook-up, Electrical, for Shipboard Use, B	113.05–10
MIL–W–16878—Wire, Electrical (Insulated, High Temperature), D	113.05–10
National Fire Protection Association Batterymarch Park, Quincy, MA 02269	
56A—Inhalation Anesthetics, 1973	110.10–1; 111.80–20
70—The National Electrical Code, 1981	110.10–1; 111.50–15; 111.80–5
Underwriters Laboratories 333 Pfingsten Rd., Northbrook, IL 60062	
UL 20—General-Use Snap Switches, 1979	110.10–1; 111.55–5
UL 62—Flexible Cord and Fixture Wire, 1979	110.10–1; 111.60–5
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UL 104—Elevator Door Locking Devices and Contacts, 1973	110.10–1; 111.80–35

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UL 197—Commercial Electric Cooking Appliances, 1978, with revs thru Nov. 1979	110.10–1; 111.80–65
UL 363—Knife Switches, 1980	110.10–1; 111.55–5
UL 486A—Electric Wire Connectors and Soldering Lugs for Use with Copper Conductors, 1978	110.10–1; 111.60–29; 111.60–40
UL 498—Electrical Attachment Plugs and Receptacles, 1974, with revs thru Jan. 1979	110.10–1; 111.75–30
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VIII Federal Grain Inspection Service, Department of Agriculture (Parts 800-899)

IX Agricultural Marketing Service (Marketing Agreements and Orders; Fruits, Vegetables, Nuts), Department of Agriculture (Parts 900-999)

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List of CFR Sections Affected

All changes in this volume of the Code of Federal Regulations which were made by documents published in the Federal Register since January 1, 1973, are enumerated in the following list. Entries indicate the nature of the changes effected. Page numbers refer to Federal Register pages. The user should consult the entries for chapters and parts as well as sections for revisions.

For the period before January 1, 1973, see the "List of CFR Sections Affected, 1949-1963 and 1964-1972," published in three separate volumes.

1973

46 CFR — 38 FR Page

92.20-25 (b)(3) removed 20449
93.07-1—93.07-90 (Subpart 93.07) Added 17004
105.20-3 (a)(1) Table amended 17229

1973–1974

(Regulations published from October 1, 1973 through September 30, 1974)

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90.05-10 Revised 29320
90.05-35 *(a)(1)(i) and (ii) and (2)(i) revised; (a)(1)(iii) removed; (a)(2)(ii) and (iii) added 22953
90.10-17 Removed 29320
93.13-10 *(b) revised 18767
94.60-1 (Subpart 94.60) *Added 10139
96.35-5 (c) revised 33475
97.15-65 *Added 10139
97.37-55 *Added 10139
97.75-1 *Revised 18767
98.30-1—98.30-39 (Subpart 98.30) *Added 22954
98.35-1—98.35-50 (Subpart 98.35) *Heading revised 22955
98.35-1 *(a) and (c) amended; (f) added 22955
98.35-3 *(a) amended 22956
98.35-10 *(e) removed 22956
98.35-25 *Revised 22956
98.35-30 *Revised 22956
98.35-35 *Removed 22956
98.35-40 *Removed 22956

NOTE: Symbol (*) refers to 1974 page numbers.

1974–1975

(Regulations published from October 1, 1974 through September 30, 1975)

46 CFR — 39 (40†) FR Page

93.20-01—93.20-20 (Subpart 93.20) Added ..... †36343
93.20-20 Table corrected ..... †39506, 42195
95.15-10 (h) revised ..... †6209
97.19-1 (Subpart 97.19) Added ..... †2689

1975–1976

(Regulations published from October 1, 1975 through September 30, 1976)

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91.01-25 Added Δ32744
92.07-5 (c) amended Δ17910
94.10-5 (b)(2) revised 58454
95.10-10 (l)(4) revised Δ43151
97.37-40 Note revised 53454
105.01-1 Revised Δ17910
105.01-5 Revised Δ17910
105.01-10 (a) revised Δ17910
105.05-1 (a) and (b) amended Δ17910
105.05-3 Revised Δ17910
105.05-5 Revised Δ17910
105.10-25 (a) revised Δ17910
105.20-3 (a)(1) amended Δ23401
105.35-15 (c) revised Δ43151
105.90-1 Heading and (b) introductory text revised Δ17910

NOTE: Symbol (†) refers to 1975 page numbers.

NOTE: Symbol (Δ) refers to 1976 page numbers.

1976–1977

(Regulations published from October 1, 1976 through September 30, 1977)

46 CFR	41 (42*) FR Page
90.05-1 Table amended; eff. 12-27-77	*49025
91.55-15 (a)(2) amended; eff. 12-27-77	*49025
96.13-1 (b) added	*5963
96.17-1 (Subpart 96.17) Added	*5963
96.20-1 Revised; authority citation added	*35797
Corrected	*51607
96.20-10 (b) introductory text and (1) revised	*35797
96.25-1 (Subpart 96.25) Added	*5964
96.27-1 (a) amended	*5964
96.35-15 Revised	*5964
97.05-5 Revised	*5964
97.16-1 (Subpart 97.16) Added	*5964
98.01-5 (d) removed; (e) amended; eff. 12-27-77	*49025
98.05-1—98.05-60 (Subpart 98.05) Removed; eff. 12-27-77	*49025
98.10-1—98.10-50 (Subpart 98.10) Removed; eff. 12-27-77	*49025
98.15-1—98.15.50 (Subpart 98.15) Removed; eff. 12-27-77	*49025
98.18—92.18.50 (Subpart 98.18) Removed; eff. 12-27-77	*49025
105.10-10 (a) amended; eff. 12-27-77	*49025
105.10-15 (a) amended; eff. 12-27-77	*49025

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(Regulations published from October 1, 1977 through September 30, 1978)

46 CFR	42 (43†) FR Page
90.05-1 (c) revised	63643
97.07-13 Removed	63643

NOTE: Symbol (*) refers to 1977 page numbers.

NOTE: Symbol (†) refers to 1978 page numbers.

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46 CFR	43 (44Δ) FR Page
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91.25-50 (a)(1) table footnote 1 and (2) table footnote 1 revised	Δ13491
91.55-15 (a)(3)(i) and (ii) revised; (a)(3)(v) added	46546
94.40-20 Added	Δ38784
94.40-25 Added	Δ38784
95.10-10 (g) and (i) revised; (i-1) and (i-2) added	Δ2392
95.10-90 (a)(1) revised; (a)(5) and (6) added	Δ2392
95.50-20 Added	Δ34133
97.15-70 Added	Δ38784
98.25-1 Revised	Δ26008
107—109 (Subchapter I-A) Added	56802
107 Added	56802
108 Added	56808
108.496 Added	Δ34133
108.514 (e) and (f) added	Δ38784
109 Added	56828
109.225 Added	Δ38785

1979–1980

(Regulations published from October 1, 1979 through September 30, 1980)

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91.25-15(b) added	*24477
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92 Incorporation by reference approvals	*64816
93 Incorporation by reference approvals	*64816
94 Incorporation by reference approvals	*64816
94.20-25 (o) revised	*64187
94.20-35 (e) revised	*64187
94.41-1—94.41-10 (Subpart 94.41) Added	*24477
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NOTE: Symbol (Δ) refers to 1979 page numbers.

NOTE: Symbol (*) refers to 1980 page numbers.

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94.41-5 (d) corrected	*29588
94.43-5 (b) revised	*64188
95.10-10 (g), (i), (i-1), and (i-2) compliance date postponed in part to 2-12-81	*22040
95.10-90 (a) (1), (5), and (6) compliance date postponed in part to 2-12-81	*22040
97 Incorporation by reference approvals	*64816
97.13-10 (a)(4)(ii) revised	*24478
(a)(4)(ii) effective date corrected to 11-1-80	*29588
97.15-37 Added	*24478
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97.37-43 Heading and (a) revised	*24478
Heading and (a) effective date corrected to 11-1-80	*29588
97.85-1—97.85-10 (Subpart 97.85) Added	*24478
Effective date corrected to 11-1-80	*29588
105 Incorporation by reference approvals	*64816

NOTE: Symbol (*) refers to 1980 page numbers.

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90 Incorporation by reference approvals	47947
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90.10-40 Added	69244
90.30-10 Added	69244
91 Incorporation by reference approvals	47947
92 Incorporation by reference approvals	47947
93 Incorporation by reference approvals	72464, 86672, 47947
94.10-10 (e) revised	†28168
94.10-15 (c) added	†28168
94 Incorporation by reference	47947
94.10-40 (a) footnote 3 revised	†28169
95 Incorporation by reference approvals	72464, †19660, †47947
97 Incorporation by reference approvals	72464, †47947
97.07-1 (a) revised; interim	77443
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105 Incorporation by reference approvals	47947
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109 Incorporation by reference approvals	47947
109.411 (a) and (b) revised; interim	77443

NOTE: Symbol (†) refers to 1981 page numbers.